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CO-OPERATIVE RESOURCE MANAGEMENT AS AN ADAPTIVE STRATEGY FOR ABORIGINAL COMMUNITIES: THE WHITEFISH LAKE FIRST NATION CASE STUDY

by
DAVID C. NATCHER ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Doctor of Philosophy

DEPARTMENT OF ANTHROPOLOGY

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled *Co-operative Resource Management as an Adaptive Strategy for Aboriginal Communities: The Whitefish Lake First Nation Case Study* submitted by David Charles Natcher in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

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Abstract

Over the last three decades the traditionally used territory of the Whitefish Lake First Nation (WFLFN) has been targeted for the extraction of both renewable and non-renewable natural resources to the extent of limiting all other forest uses, including the traditional land use patterns of Whitefish Lake residents. As a result of the industrial and regulatory effect, the WFLFN has found itself nested within a landscape of competing and dominating interests that have failed to recognize the cultural significance of the land in the formation of the Whitefish Lake identity.

Because of the interplay of interests that have come to exist within the same geographical landscape, and because access to lands and resources remains fundamental to Cree culture, Whitefish Lake has recognized the need to establish an interdependent relationship with competing interests or risk continued marginalization or possible displacement. Accomplished through the Whitefish Lake Co-operative Management Agreement, the reordering of existing social systems has provided an institutional space to articulate local concerns, has facilitated local involvement in the land management process, and has established mechanisms of self-empowerment through which the acquisition of knowledge, skills, and economic self-sufficiency can provide a wider range of options for Whitefish Lake to call upon when dealing with competing populations. Thus the Whitefish Lake Co-operative Management Agreement, as used in this analysis, represents an adaptive strategy employed by the WFLFN to enact fundamental change in the institutions that most directly influence their access to traditionally used land and resources. This research therefore represents a primary theme in human ecology; that is, the study of how

people adapt, whether through competitive or cooperative processes, to gain or maintain access to natural resources.

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1. The Research Problem

Examples from across Canada have shown that when the exploitation of lands and resources grow in profitability the cultural landscape of aboriginal communities stands at risk unless a process of exclusion or a means of adaptation can be established. As a means of adaptation, aboriginal communities are entering into co-operative management agreements with government and industry in an attempt to regain access and influence over the lands and resources that continue to sustain their culture, economies, and distinctive ways of life. These institutions represent a means by which community identity can be strengthened, cultural distinctiveness can be preserved and at some levels enhanced, and as a major move towards self-empowerment. The Whitefish Lake Co-operative Management Agreement is such an institution and will serve as an ethnographic case study throughout this research.

To understand how groups or individuals respond to particular challenges requires a linkage between the world of theory and the world of action. This research therefore represents a way to understanding real world change through the application of existing theory. Drawing from the experiences of the Whitefish Lake First Nation (WFLFN), this study illustrates a primary theme in human ecology; that is, the study of how people adapt, whether through competitive or cooperative processes, to gain or maintain access to natural resources. Thus the Whitefish Lake Co-operative Management Agreement, and co-management arrangements in general, represent coping mechanisms or ways of dealing with people and resources to attain goals and overcome immediate and future obstacles

(Bennett 1969). Whether regarded as a process of adjustment or a means of compromise, institutional change ultimately rests on a behavioral adjustment among individuals and/or groups in the course of realizing goals, goals that in this analysis includes achieving a measure of influence over traditionally used lands and resources. As Feit (1984: 435) has noted:

> [W]hen hunting peoples in developed states are able to mobilize some political/economic leverage in the macro-arena then it may be possible for them not only to resist external pressures leading to a restructuring of their own social fabric, but they may also be able to restructure the relationship between themselves and the impinging institutions. The extent of such a restructuring is variable, and the means of recognizing relationships between a hunting society and macro-societies necessarily involves the creation and introduction of new institutions.

This research is presented in the following format:

Chapter Two provides an overview of the challenges confronting the WFLFN in their access to traditionally used lands and resources. These include the industrial exploitation of the traditional lands of the WFLFN, the provincial land tenure system, and conflicting epistemologies regarding aboriginal land use.

Chapter Three reviews the theoretical foundation relied upon throughout this analysis, including: internal frontiers, the human-ecological niche, and adaptive strategies as a form of cultural capital.

Chapter Four provides an overview of the relevant literature supporting the theoretical approach and additional areas applicable to this research, including: land tenure and common-property institutions, co-management, institutional change/evolution, and traditional ecological knowledge systems.

Chapter Five presents the methods utilized throughout this research. This chapter concludes with a discussion of the problems associated with land use research, specifically as it relates to the decontextualization of local knowledge systems and its' potential exploitation by external interests.

Chapter Six focuses specifically on the Whitefish Lake Co-Operative Management Agreement as a process of institutional change. This chapter presents the evolution of management specific to this area and the mechanisms by which Whitefish Lake chose to influence the situation that now confronts them.

Chapter Seven provides additional examples of how aboriginal resource users are employing co-operative management as an adaptive strategy to gain or maintain access to traditionally used lands and resources. These include additional examples from Canada, supported by examples from Alaska and Russia. This review is broadened to include issues pertaining to wildlife, fisheries, and land management initiatives. This chapter also addresses the problems and prospects associated with the adoption/incorporation of external institutions into the cultural matrix of aboriginal communities

Chapter Eight addresses the adaptive strategies employed by the WFLFN in their effort to redefine the behavioral patterns that exist between themselves and neighboring/competing populations. These strategies have been incorporated into the Whitefish Lake Co-operative Management Agreement as a means of self-empowerment that can lead to a more equitable role in the management of their traditionally used lands and resources.

Chapter Nine, the concluding chapter, addresses the cultural flexibility of the WFLFN in adapting, as well as influencing the institutional framework that has largely dictated their involvement with traditional used lands and resources for the past century. This chapter concludes by offering future research considerations, particularly in calling for an institutional analysis that takes into account both temporal and cultural influences affecting institutional change as well as for the development of a co-management theory that contributes to our general understand of the evolution of social systems.

Throughout this thesis terms such as 'management' and 'resource' are used in describing the institutional roles of both the WFLFN and the province of Alberta in relation to environmental interaction. However these terms, as they are generally used, grossly misrepresent the reciprocal values expressed by Whitefish Lake residents concerning the land. In fact, the term 'resource management' lacks an equivalent reference in the Cree language. Nevertheless, as Notzke (1994: 2) has noted, indigenous peoples have long employed, and are still employing, measures of resource manipulation and conservation which would normally be associated with what is referred to as resource management.

2. Conflicting Landscapes

Introduction

This chapter provides the reader with a contextual understanding of the challenges that have led to the institutional formation of the Whitefish Lake Co-operative Management Agreement. Following a brief description of the physical landscape, this chapter presents the temporal landscape of change, beginning with: the pre-contact mobility patterns of the Whitefish Lake Cree; government involvement initiated through the negotiation of treaties; reserve administration; and the encroachment of industrial activity in the traditional territory of the WFLFN. This overview is followed by a discussion of the political-economy of Alberta, specifically as it applies to land-tenure and managing for the multiple-use of lands and resources. This section presents the inherent conflict between industrial development and principles of sustainable management which recognize the alternative needs of aboriginal forest users. In conclusion, this chapter discusses the epistemological differences that have historically divided the WFLFN and government/industry in the management of their shared landscape.

2.1 Description of the Physical Landscape

The community of Whitefish Lake is located on the west and north shores of Utikuma Lake in north central Alberta (IR. 155, 155A, 155B) (see Fig. 1 and 2). The 1,400 members of the WFLFN represent the western extreme of the Strongwoods Cree division (see Fig. 3).[1] Located north of the Saskatchewan River in Alberta, the WFLFN inhabits a predominantly boreal forest environment with transition zones south to the prairies and west to the Rocky Mountains. The physical landscape can be characterized as a gently undulating plain consisting of a number of upland areas dissected by two primary river drainages - Sipihk 'The Big River' (Utikuma River) and Atcakasipik 'Mink Creek'. The local environment is comprised predominately of heavy forest cover of white and black spruce but including other conifers such as balsam and jack pine; deciduous trees include white birch and trembling aspen. The region is further characterized by low rolling hills and vast numbers of lakes, rivers, and streams.

---

[1] Approximately half (740) the members reside on the Whitefish Lake Reserve.

This area of the boreal forest is known to support a diversity of wildlife species, including approximately 236 species of birds and 43 species of mammals (Westworth and Associates Ltd. 1990), with moose representing the most critical species in economic terms and in terms of its total subsistence value to the Whitefish Lake community. The distribution of rivers, lakes and streams support important domestic, recreational, and commercial (whitefish, jack, and pickerel) fisheries for both band and non-band members. The principal land use in the area has historically included the subsistence pursuits of the WFLFN (i.e., fishing, hunting, trapping, and gathering), and contemporary disposition of oil and gas exploration and extraction, timber harvesting, sport hunting and fishing, and other forms of recreational activities.

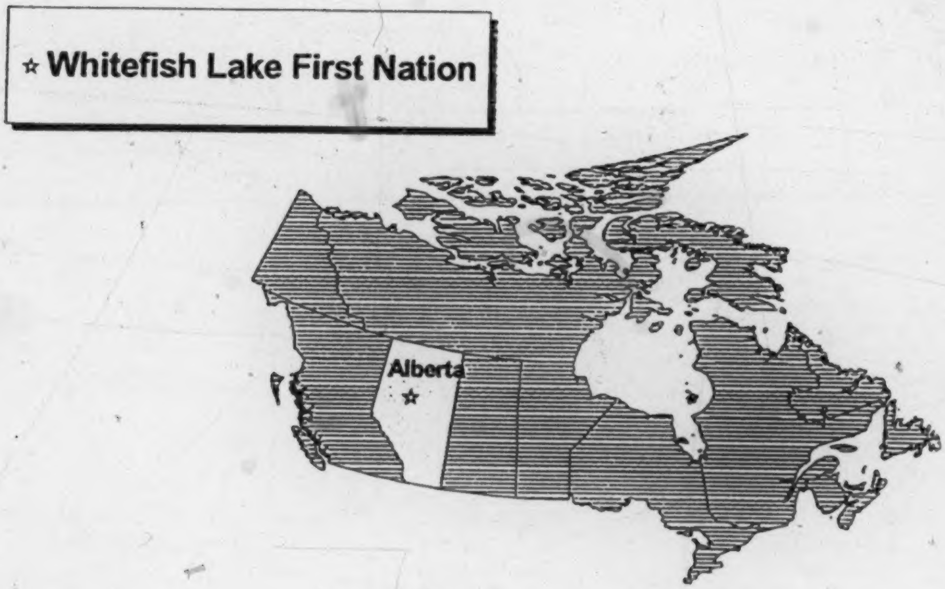
☆ Whitefish Lake First Nation
Alberta

Figure 1. Whitefish Lake First Nation

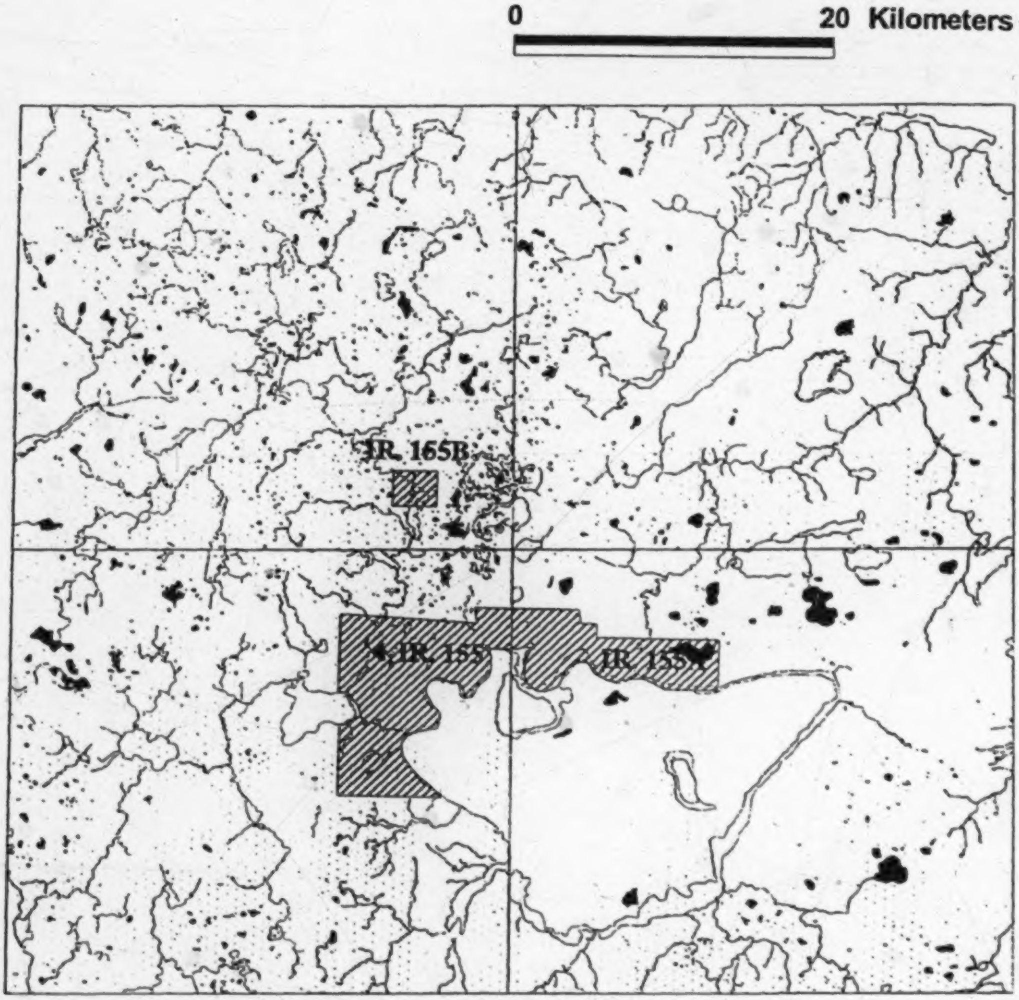
0
20 Kilometers
I.R. 165B
I.R. 155
I.R. 155A

Figure 2. Whitefish Lake Reserves
(I.R. 155, 155A, 155B)

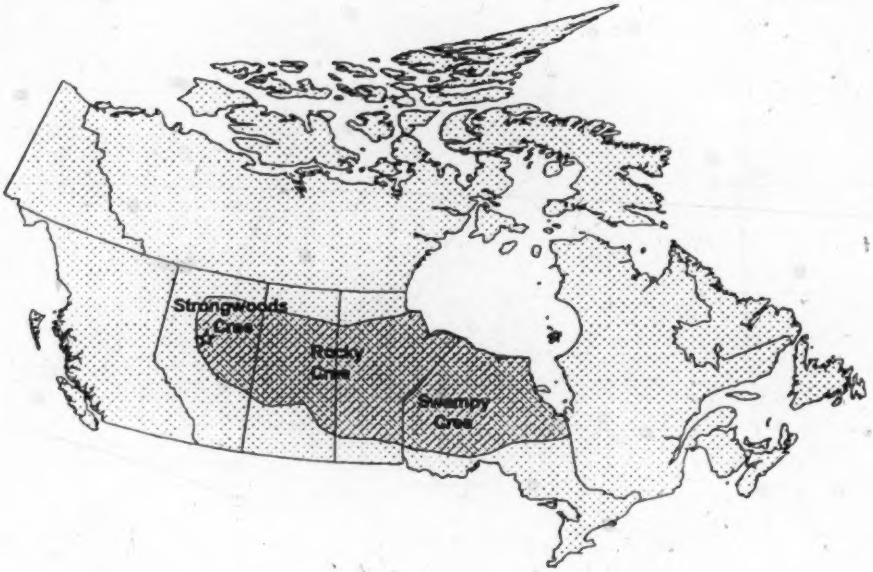
Strongwoods
Cree
Rocky
Cree
Swampy
Cree

Figure 3. Western Woods Cree Distribution

2.2 Ethnographic Context

It had generally been believed that the western Cree represented a late eighteenth and early nineteenth century westward migration resulting from the depletion of game and furbearers in the eastern regions of Lake Winnipeg. However, research has shown (Ives 1993) that although there was a migration at this time, the Strongwoods Cree had long been present in the area, perhaps as early as 900 A.D..

At the same time as the westward migration was occurring, the aboriginal population was being rapidly depleted as epidemics swept the western prairies, resulting in the loss of an estimated half to three-fifths of the total Native population (Smith 1978: 258). In an attempt to consolidate, the Strongwoods Cree moved southward towards the Saskatchewan River drainage, with the Chipewyan from the north moving into the abandoned Cree territories. By the end of the 19th century, however, the Strongwoods Cree had returned to their traditional territories, forcing the Chipewyan northward.

Throughout this period, the Cree maintained a 'semi-nomadic' lifestyle. Depending on resource availability/variability, Whitefish Lake residents distributed themselves accordingly, whether in response to long term resource changes or temporary resource fluctuations. Because of the ecological characteristics of the boreal region it was often necessary for local residents to exploit resources in low population density. Not only was it necessary for individuals to adjust their location and movement patterns in response to resource availability, but they also needed to adjust social units, from the nuclear family on up (Steegman 1983: 344). Because of this, membership in local bands was flexible, varying according to environmental conditions and family realignments (Smith 1978: 259).[2]

Central to the adaptive strategies of the Whitefish Lake Cree was a cyclical mobility pattern. In the summer months residents would live predominantly in tents along the north shore of Utikuma Lake where their horses could graze and women and children could fish and snare rabbits and other small game. The men, using the summer camp as a base, would pursue moose and deer along the lake shore and nearby wetland areas, enabling them to return to camp each night. This was also a time of major socialization and a time to reinforce social bonds. Nearing the end of summer and early fall, residents would begin preparing for winter by drying moose meat and fish and storing berries for the months ahead. With preparations complete, community residents would break into family units and disperse throughout their winter trapping territories.

While there is no evidence for individual or family-owned hunting or trapping territories in the pre-contact period, individual trapping territories were recognized by the end of the nineteenth century, and combined hunting and trapping territories existed where subsistence was based on nonmigratory ungulates, furbearers, and fish.[3] However, with the coalition of the Hudson's Bay and North West companies in 1821 there was an increased tendency for bands to be localized and oriented near specific mission-trading posts (Smith 1978: 260). During this period government involvement with the Strongwoods Cree was initiated through the negotiation of treaties.

---

[2] Although it could be argued that low population density is the cause and effect of the limits apparent in northern hunter/gatherer food production, it could also be said that that the limiting of group size was the most effective way of utilizing and managing subsistence resources. That is, with a limited group size, mobility is enhanced which allows the group to range over a larger territory thus exploit its resources far less intensively than a less mobile group (Hunn 1982: 37).

[3] There has been considerable debate as to the origins of the family hunting/trapping territory. These differing perspectives include the 'classic' view that supports the existence of family hunting territories prior to European contact and the 'postclassic' view that argues that family hunting territories arose after contact as a result of the fur trade. For further review see Bishop and Morantz (1986).

For nearly a decade before the signing of Treaty Eight[4] (1899) the Government of Canada debated the merits of coming to terms with the Indians from the Lesser Slave Lake and upper Peace River area (Leonard 1995: 16). However, after recognizing that the area housed sufficient natural wealth (mineral and agricultural potential) a treaty arrangement was believed to be advisable. In the spring of 1899, word of the pending treaty arrangement spread throughout the proposed settlement area, which ranged from the northeast border of British Columbia, east of Lake Athabasca, north to Great Slave Lake, and south to the Athabasca River (see Fig. 4).

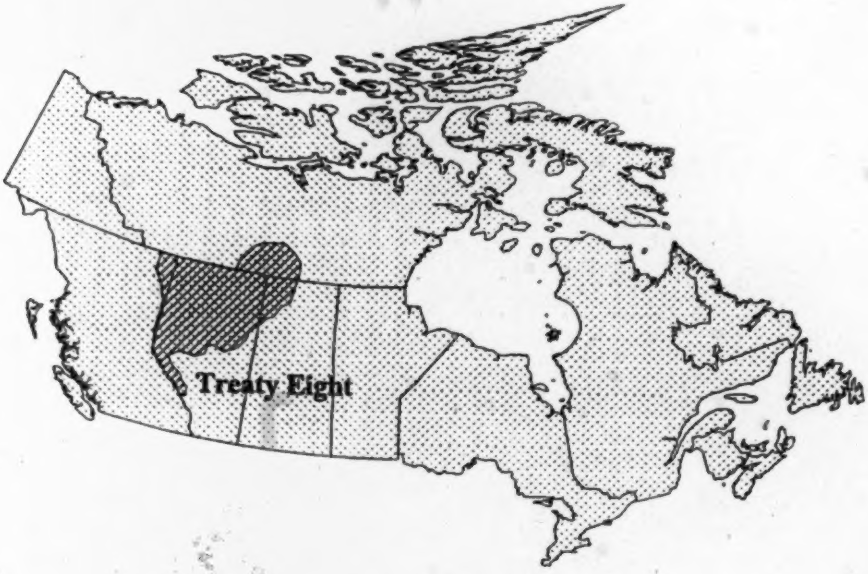

Figure 4. Treaty Eight

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[4] See Appendix A: Treaty Eight

Word of the proposed treaty arrangement was, however, met with considerable apprehension and resistance by both First Nation leaders and Metis delegates. Whitefish Lake in particular initially refused to enter into treaty negotiations with the Government of Canada and was generally regarded as being "hostile" to the entire treaty process.[5] One of the primary concerns of Whitefish Lake, as well as other First Nation groups in the area, was the enactment and enforcement of fish and game regulations by government officials and the disruption that would result to their traditional ways of life. In addition, the establishment of reserves was seen as a major threat to their continued seasonal mobility, a mobility pattern that was integral to the Cree lifeway. Concerns regarding the centralization and sedentary policies of the Crown were also expressed by Indian Affairs official, J.A. McKenna, who confided:

> ... as the country is not one that will be settled extensively for agricultural purposes, it is questionable whether it would be good policy to even suggest grouping them in the future. The reserve system is inconsistent with the life of a hunter ...[6]

Despite their concerns most First Nation groups within the Treaty Eight area did enter into treaty between 1899 and 1900 with the guarantee that:

> ... when reserves are offered [to] you there is no intention to make you live on them if you do not want to, but, in years to come you may change your minds.[7]

It was further assured that:

> ... your forest and river life will not be changed by the treaty, and you will have your annuities, as well, as long as the sun shines and the earth remains.[8]

---

[5] PAA 281 / 149, Holmes to Bishop Young, 3 June 1899.

[6] NAC RG10 Vol. 3484 file 75236-1, McKenna to Superintendent General of Indian Affairs, 17 April 1899.

[7] Speech made by Commissioner Ross (in Leonard 1995: 24).

Although the majority of Treaty Eight First Nations had entered into treaty between 1899 and 1900, the settlement of Treaty Eight was far from complete.[9] The WFLFN in particular refused to come to terms until 1901 and the settlement of the Whitefish Lake reserve was not established until 1908. The reserves that were ultimately established for the WFLFN consisted of a land base of 4,701 hectares that traditionally served as their summer gathering and fishing site.

Despite the establishment of the Whitefish Lake reserves, Whitefish Lake families were, for the most part, able to maintain a traditional, although modified, land-based lifestyle. It was not until the post-war period of the 1940s that local land use patterns were significantly altered. Two profound changes took place in the post-war years. The first was that the value of fur dropped in the 1940s and remained depressed until the 1970s. The loss of wage earning opportunities limited the subsistence harvesters' means to purchase manufactured items such as clothes, hardware, ammunition, twine for nets, and food staples such as flour, sugar and baking powder. This cash-poor period forced many Whitefish Lake families to begin settling on reserve lands. The second was the increased global demand for energy and mineral resources. According to Smith (1978: 259):

> Although reserves were created under the treaties between 1876 and 1906, the Cree were able to continue the use of traditional territories. It was not until the modern period that the encroachment of industry began to affect traditional territorial exploitation as mining and lumbering operations commenced and further sedentarization was encouraged...

---

[8] Speech made by Father Lacombe (in Leonard 1995: 24).

[9] Outstanding claims persist today as illustrated by the Cree of Lubicon Lake who after a century continue to pursue a settlement of claim.

With the coerced sedentarization of the Whitefish Lake Cree, the 'spirit' of the treaty was quickly superseded by a system of paternalistic reserve administration under the terms of the Indian Act which extinguished any aboriginal claim to territorial rights. Because the reserve system was seen as an interim measure advanced by the federal government for the purpose of assimilation of the aboriginal populations into the mainstream society (e.g., Friesen 1987; Elias 1991; Miller 1991), the right of access to resources off-reserve was never considered essential to the economic development of aboriginal communities. Consequently, Whitefish Lake had been given no authority on the basis of aboriginal title[10] nor on the basis of customary use to regulate access to resources within their traditional territory. As a result, the lands that have been placed under the control of the WFLFN through the reserve system have fallen well short of meeting the socio-economic needs of the Whitefish Lake people, while the resources needed to maintain the local economy that lie outside of the reserve area are continually being threatened by external interests in the form of resource exploitation.

While a treaty of land entitlement claim[11] (1990) has provided the WFLFN with title to an additional land base (5,830 acres), lands that have fallen outside of the land entitlement, lands which - from a community perspective - represent their traditionally used and occupied territory, are now legally and politically recognized as 'unoccupied' provincial crown lands. Unoccupied crown lands have been defined as lands in which no private individual or firm has acquired rights of property or title (Hrenchuk 1993: 71). To the Crown, as well as to the general populace, unoccupied crown lands take on an associative meaning that these lands are to a large extent unused; thus crown lands are considered common property of the state. Since these lands are considered to lack productive uses they are considered available to the public. Therefore, public lands are made available to development initiatives that are deemed to be in the public's interest (Hrenchuk 1993: 71).

---

[10] The Supreme Court of Canada's decision in Delgamuukw (December 11, 1997) provided the first comprehensive definition of Aboriginal title. The court affirmed that Aboriginal title is first, a right of exclusive use and occupation of that land that allows the Aboriginal group to utilize that land for a variety of reasons not limited to traditional activities; second, the right to choose to what purposes the land can be put; and third, that lands held pursuant to Aboriginal title have an inescapable economic component.

[11] Treaty Land Entitlement Claims represent legal obligations of the Crown to fulfill the amount of land to which First Nations are entitled under the original treaty process. Treaty Land Entitlement Claims are filed with the federal government; however, both the province and federal government participate in the negotiation of settlements.

Despite the legal connotation of unoccupied crown lands, the residents of Whitefish Lake continue to recognize these lands as communal in nature (Ivanitz 1996). For the Whitefish Lake Cree, the geographical extent of their traditional land base has served as the single most important source of self-identification. The 'land' not only differentiates Whitefish Lake from non-aboriginal peoples but it also serves as the primary distinction between themselves and other First Nations (Hrenchuk 1993).

2.3 Provincial Land Tenure

Within the province of Alberta, the majority of forested lands are classified as provincial crown lands with a limited proportion being owned by individuals or private enterprises (see Tables 1 and 2).

ALBERTA PROVINCIAL LAND BASE	
Total Area	66.1 million ha
Land Area	64.4 million ha
Forested Land	38.2 million ha

Table 1. Natural Resources Canada 1996.

Alberta Forest Ownership	Provincial	87%
	Federal	9%
	Private	4%

Table 2. Natural Resources Canada 1996.

The transfer of jurisdiction over crown lands and resources from the federal government to the province was the result of the 1930 Natural Resources Transfer Act (NRTA). The transfer of jurisdictional authority placed, for the first time, the responsibility for managing and administering all crown lands and resources, and the interests therein, under the auspices of the Alberta provincial government.

This role, however, has placed the provincial government in a tenuous position. On the one hand the province, as 'owner', is expected to secure the highest economic return for commodities rendered (i.e., timber, oil/gas); on the other hand the province has been charged with the responsibility of enhancing environmental quality in the management of multiple resource use, thereby prioritizing resource 'values' over economic returns (Ross 1996). The duality of this role is often times quite conflicting, as noted by Moen (1990:5):

> An owner usually wants to get the best economic return from his commodity, in this case, timber. A regulator must take into account public interest factors relating to the resource, such as environmental concerns and resource renewal, and must also consider dimensions of the forest other than timber such as watershed management and protection of wildlife. Alberta must therefore balance the advantages of economic return to the people of the province with its regulatory responsibility for protecting the forest resource.

Thus the province of Alberta must try to fulfill two contradictory functions - accumulation and legitimization. The function of accumulation, that is the maintenance of social conditions favorable to the growth of the economy, and the function of legitimization, or maintaining conditions promoting social harmony instead of social conflict, pose a delicate problem: a 'state' that helps one segment of society (i.e., industry) accumulate capital at the expense of others potentially loses its legitimacy and undermines the bases for its support. But a state that ignores the necessity of capital accumulation risks drying up the source of its own power, the economy's surplus production capacity and the taxes accrued from the surplus (Whitt 1982: 24).

Recognizing their dual responsibility, the province has adopted a mandate for managing Alberta's crown lands and forests which calls for an integrated or multiple-use approach to resource management. Thus a holistic approach which recognizes the forest's potential to sustain a wide range of values has been sought. Based upon this principle, the province recognizes that:

> The use of the forest land must take into account the ability of the forest to sustain various uses, the need and right of all users, and the benefits and costs of each use (Canadian Council of Forest Ministers 1992: 18).

In theory, this approach considers the socio-cultural concerns of local resource users as commensurate with the economic returns of resource developers. In practice, however, integrated resource management techniques, as Ross (1996: 114) has shown, have failed to live up to the promises made by the province. First, provincial land management has emphasized commodity production, in particular timber and minerals, to the detriment of other forest users. Alberta alone has entered into contractual agreements with industry partners to develop a land base equivalent to the size of Great Britain (Clark and Barlow 1997: 92). This industrial focus has subjugated and devalued non-market interests, resulting in the forest landscape being dominated by predominantly industrial users. Second, industrial uses have significantly contributed to the degradation of forest resources, restricting the potential for any future alternative uses. And third, conflicts over resource use, specifically aboriginal in nature, have increased both in number and intensity in recent years (Ross 1996).[12]

Many of the conflicts that have occurred between aboriginal communities and resource developers have been the result of the province's failure to acknowledge aboriginal land and resource use outside the reserve boundaries when leasing or allocating crown lands to industrial partners. This conflict has become increasingly apparent when provincial land and resource management objectives come into conflict with local land use concerns.

Weinstein (1993:19) has identified two inherent problems involving aboriginal communities and industrial-scale resource development. The first is the belief that aboriginal land and resource use has been to a large extent discontinued. This attitude stems from the belief that subsistence pursuits have been abandoned in favor of a changing community life and wage earning opportunities. The second misconception is that if remnants of a subsistence economy continue to exist they will soon be abandoned for a more productive livelihood made available through wage earning industrial employment. This belief relates directly to the traditional paradigm of social change which assumes a natural transition from hunter to proletarian (Weinstein 1993).

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[12] This conflict has been demonstrated through the province's inclusion of registered trapping areas within provincially allocated *Forest Management Agreement* areas. The conflicting land use patterns that have emerged have often resulted in long-term ecological disruptions to registered trapping areas as well as financial disruptions to registered trappers. As Ross (1996) has noted, in each of these cases the rights of Aboriginal resource users have either been ignored or, as in the case of trapping, considered secondary to the maximization of industrial production.

- *Forest Management Agreements* (FMA) are vehicles by which rights to timber are allocated and define the terms and conditions by which timber may be harvested. Alberta's FMAs are the legal instruments under which the provincial government allocates to forest companies long-term (20 years) rights to major tracts of public forest land (Ross 1996). These agreements confer the responsibility of forest planning and reforestation to the holder of the agreement.

To the general populace, the term subsistence denotes the material state of a hunter's life. However, what the term actually represents, and how it has been described by Whitefish Lake residents, are the cultural values that are socially integrated into their economic relations. Freeman (1986:29) maintains that:

> ... resource harvesting activities should be considered of fundamental importance in maintaining the social vitality of communities engaged in subsistence pursuits. In this view renewable resource harvesting in Native communities relates more to questions of culture, lifestyle and community, than to questions of neo-classical economics.

However, it has generally been thought of as important in industrial society to attach numerical values to aboriginal land use in an attempt to measure the volume and value of production and exchange of subsistence resources for the making of public policy, resource management, economic planning, and for impact mitigation and compensation. These approaches have, however, misrepresented and devalued the cultural significance of subsistence activities, resulting in the marginalization of aboriginal concerns and the continued intrusion of industrial activity on traditionally used lands.

By failing to consider the cultural significance of the land, the valuation of subsistence activities have proven inadequate and often damaging to aboriginal communities. Whitefish Lake culture is rooted in the landscape and practiced through continued land-based activities; thus the cultural significance of subsistence pursuits can not be quantified in economic terms alone. By recognizing that subsistence pursuits represent more than merely food gathering activities, it follows that a quantification of subsistence resources does not thereby quantify the value of subsistence activities, much less indicate the value of the lands from which the resources were obtained (Usher 1976:118).

Despite the promises made during the original treaty process, as well as the assurances outlined in Article 12 of the Natural Resources Transfer Act,[13] the most fundamental concerns of First Nations have ultimately been ignored. As a result, aboriginal rights to lands and resources have been subject to constant erosion and progressive governmental restrictions (Notzke 1994: 105). By favoring commodity production over the interests of other forest uses, provincial policy continues to demonstrate an institutional behavior that runs counter to the long-term health of the ecosystem, and often even counter to the stated goals of the institution itself.

2.4 The Industrial Exploitation of the WFLFN Territory

For much of western society, survival and the quality of life are achieved to the degree to which the environment can be controlled and harnessed to meet collective and individual needs (Lane and Chase 1996: 180). Western society has continually demonstrated the proclivity to create values that extend well beyond basic human needs; thus desires have become accepted as cultural necessities, promoted through continued creation of consumer demand which is met by increased resource development and exploitation.[14]

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[13] Article 12 of the Natural Resources Transfer Act states "... Indians shall have the right, which the province hereby assures them, of hunting, trapping, and fishing for game and fish for food at all seasons of the year on all unoccupied crown lands and any other lands to which the said Indians may have a right of access."

Contrary to the cultural ideology of the Whitefish Lake Cree, Western thought has reforged the externalization of the environment by establishing a nature/culture dichotomy that has become fundamentally rooted within western society. Grounded in Judeo-Christian fundamentalism, the west has created conceptual compartments, segregating the land through the removal of humans from the landscape. This polarity has advanced the notion that the environment represents little more than a storehouse of resources awaiting exploitation. The fact that many western developers identify remote areas as wilderness reflects their inability to conceive of occupying and utilizing an environment without fundamentally altering it (Nelson 1982: 246).

Over the last three decades the geographical area surrounding Whitefish Lake has been increasingly targeted for the extraction of both renewable and non-renewable natural resources, such as oil, gas, minerals, and forestry products. Supporting the industrial development in the area is an extensive infrastructure consisting of access roads, seismic lines, pipelines, and right-of-way corridors that have come to dominate the topography of the local landscape (see Fig. 5, 6, and 7). The rate and extent of resource extraction in the area has resulted in a massive alteration of registered trapping areas through forest clearcutting; the removal of an equivalent amount of forest cover for pipeline and right-of-way access; and growing competition over the use of wildlife resources by non-band members facilitated by the construction of industrial access roads. In addition, provincial land managers have placed a number of land use reservations (i.e., ungulate habitat protection areas, habitat management areas, and waterfowl production areas) on local lands, further limiting and/or influencing community land use activities.

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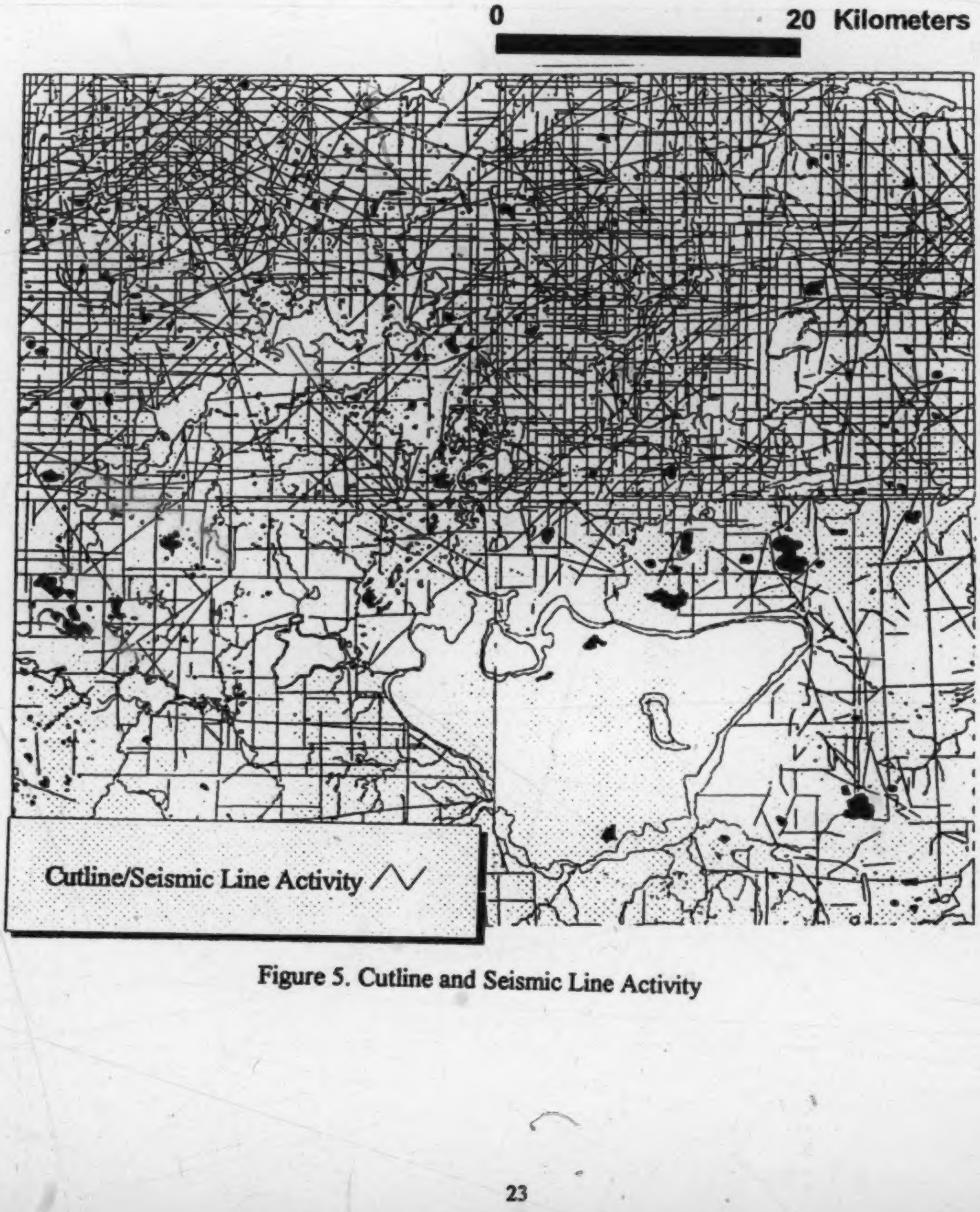
[14] This is a generalization. As with any society there are a spectrum of views relating to any one issue.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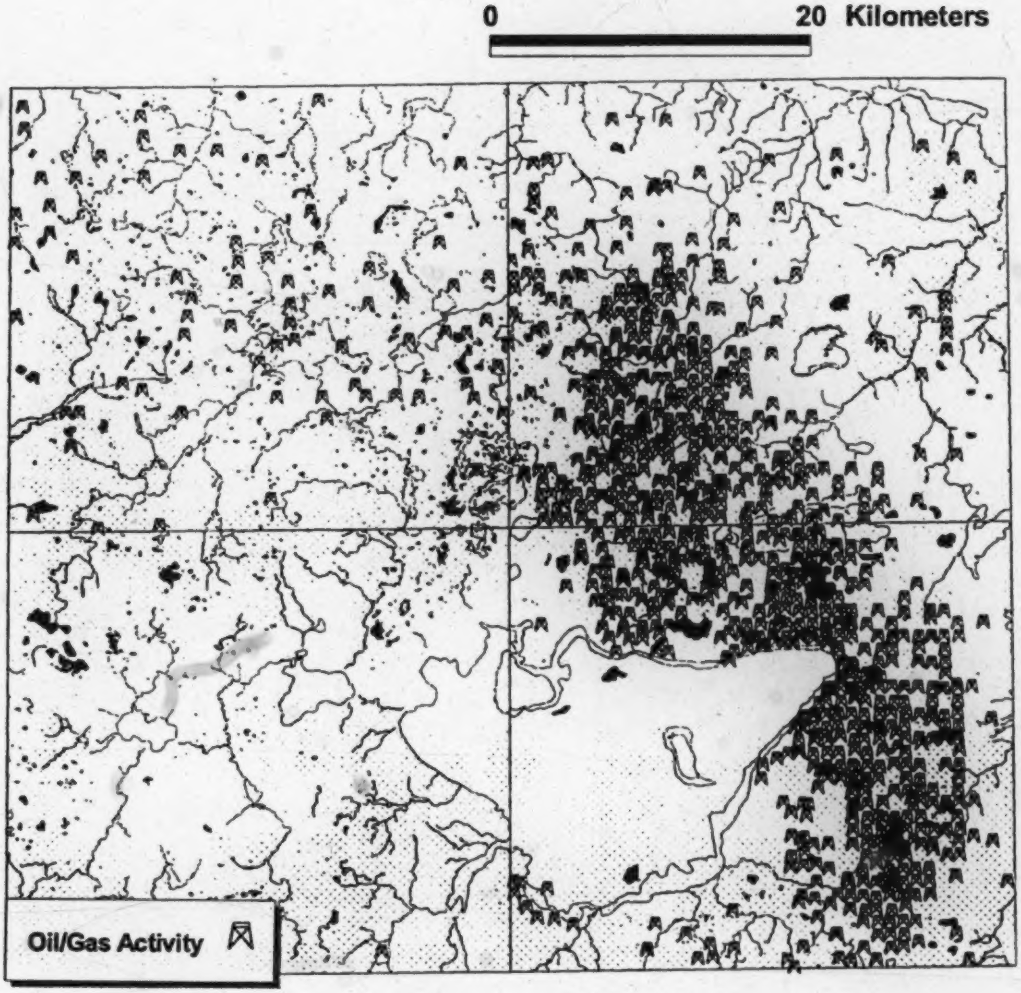
20 Kilometers
Cutline/Seismic Line Activity

Figure 5. Cutline and Seismic Line Activity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Oil/Gas Activity

Figure 6. Oil and Gas Development

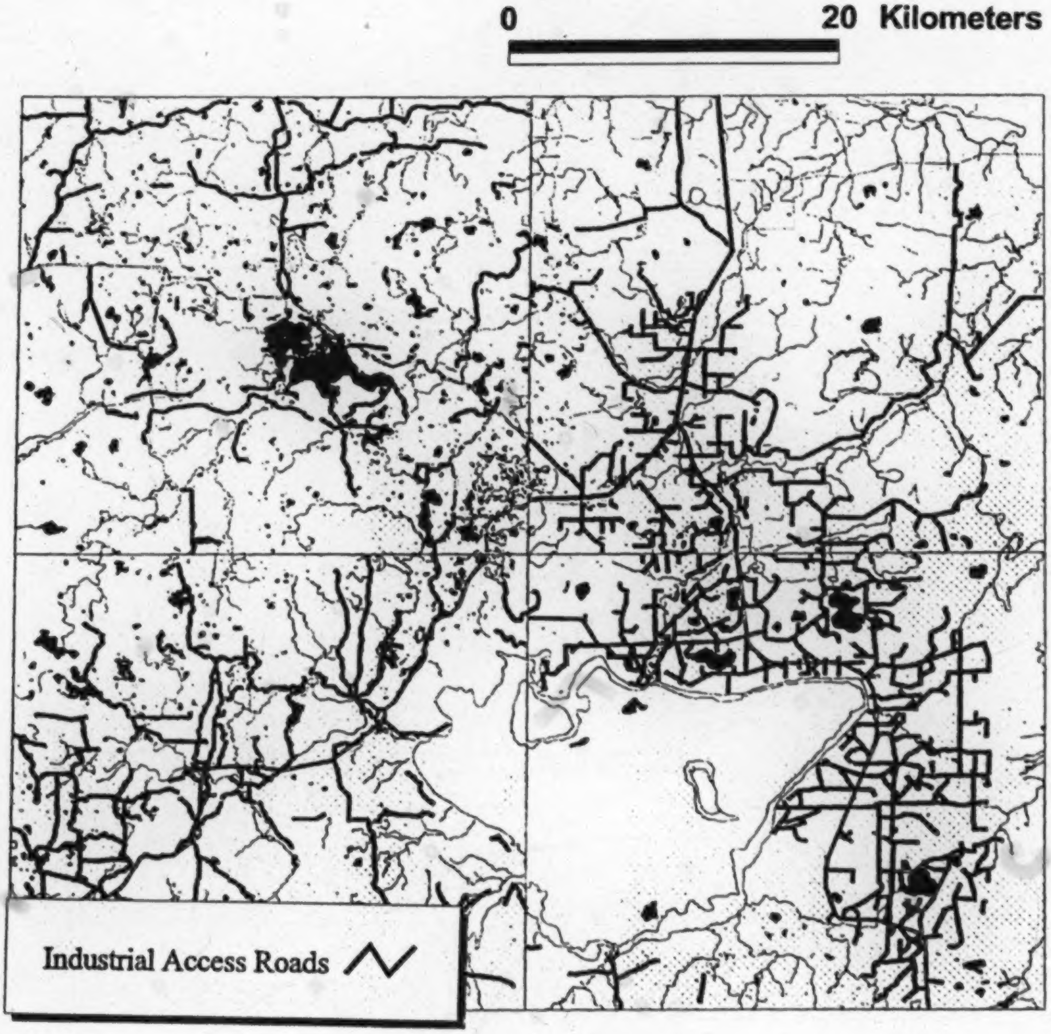
0
20 Kilometers
Industrial Access Roads

Figure 7. Industrial Access Roads

Summary

The total industrial and regulatory effect on the Whitefish Lake landscape resulting from spatial and temporal crowding needs to be considered cumulatively rather than as isolated developments as if one had nothing to do with the other. These impacts, addressed individually, may seem relatively minor to resource developers, but collectively the cumulative industrial and social impacts of the past, present and foreseeable future represent a significant strain to the physical and cultural landscapes of the Whitefish Lake community.

The following chapter presents the theoretical foundation relied upon throughout this analysis. These approaches - internal frontiers, socio-ecological niche, adaptation - provide a theoretical basis for coming to understand the conflict that often arises between indigenous peoples and industrialization when they come to exist within a shared landscape.

3. Theoretical Foundation

Introduction

This chapter presents the theoretical approaches that have proven most relevant to this research, including: internal frontiers; the human ecological niche; and adaptation as a form of cultural capital. In addition, this section provides an overview of the competing interests that have influenced the land use patterns of the WFLFN. It is through the cumulative effects of these competing interests that the Whitefish Lake Co-operative Management Agreement has largely emerged, thereby representing the impetus for its institutional evolution.

If human use of the physical environment is to be understood and evaluated, both human and physical factors must be conceived as a single ecological system. Politics, social change, greed, profit, self-actualization, and worldviews are all aspects of the human engagement with the physical environment, and these factors must be incorporated if we are to achieve a greater understanding of the total environment (Bennett 1996:78). By placing human involvement within the ecosystem, the system itself is reconceptualized: it is not a matter of a natural system being invaded by human beings, but a large, complex system involving an interaction between the physical resources, animal species, and human activities. This approach, therefore, extends the concept of the environment beyond the physical into the social. That is, other people are seen as a milieu which influences human behavior and to which humans must adapt; the social environment must therefore be given a weight equal to the physical environment in this ecological approach (Bennett 1976: 1).

In using this ecological perspective it will be necessary to consider the political context in which change has occurred. Taking into account the political-economy of Alberta, with its predominantly industrial focus (Pratt and Urquhart 1995), an analysis of change would be impossible to explain without incorporating a political framework into the inquiry. The very nature of resource use influences political behavior. As Bennett (1996: 7) has shown, the realm of politics involves the control of natural resources; hence human ecology is also political ecology.

> Since the most important predator or competitor any local population might face is its neighbor, politics are an integral part of the environmental setting (Bates 1998: 34).

3.1 Internal Frontiers

The concept of the internal frontier has been couched in a number of theoretical approaches, including: core-periphery relations; internal colonialism; under-underdevelopment; and capitalistic development (e.g., Chrisholm and Smith 1990; Harvey 1993; Jackson and Penrose 1993). Common to each approach, however, has been the exclusion and marginalization of resident indigenous peoples. Significant to this discussion is the link between social control mechanisms and frontier development in the context of land tenure, power, and conflict over resources.

According to Yiftachel and Fenster (1997: 255), internal frontiers are usually created in regions with high concentrations of indigenous minorities, where settler-indigenous struggles occur over the control of land and resources. Yet the lands that constitute these frontier settings have also provided for the material and spiritual needs of the indigenous residents, thus exposing the fundamental conflict between frontier development and indigenous peoples.

Because internal frontiers constitute a delineated geographical area, land tenure policy has proven to be an effective means to render control over minority populations. Land tenure policy that regulates access to land and resources has been used as a tool by various states to meet the needs of the majority population while ignoring and subjugating the aspirations of the local indigenous population (Fenster and Yiftachel 1997: 334). Accomplished through a number of policy approaches, from a variety of political regimes (i.e., western-capitalistic, former communist, semi-democratic, and totalitarian), the development of internal frontiers has included the resettlement of majority populations in the traditional homelands of indigenous peoples, the dissemination of the national culture, the forceful removal of minority populations, the development and 'taming' of hostile natural environments, and the imposed modernization of 'backward' regions - all in the interest of the dominant group (Yiftachel and Fenster 1997: 255). According to Hedican (1995:67):

> In many industrialized nations the indigenous populations are viewed as obstacles to the state's extraction of the resources that lie on aboriginal lands. This view of 'Native as anti-development' lies at the basis of a rationale that restricts the legal and political rights of the indigenous minorities in the 'interest of the public good'.

In general, the expansionist efforts to develop indigenous homelands has served two primary purposes. The first has been to form a major cultural ethos around which a new nation could be built. The second, and most applicable to this discussion, has been through economic development initiatives to enlarge the state's economic base (Yiftachel and Fenster 1997: 254). Rarely, however, are either of these initiatives carried-out with the interests of the indigenous population in mind. Consequently, state endeavors are often in direct conflict with the needs and desires of the local indigenous population. According to Jackson and Penrose (1993), in dealing with the concerns of the indigenous population the state often acts to control or oppress the indigenous voice by excluding the Native presence from social boundaries in order to minimize an indigenous challenge to nation-building efforts and to minimize resistance to the use and exploitation of their traditional lands and resources. By being removed from the decision-making process, indigenous peoples have had to succumb to the interests of the majority population while witnessing their homelands transformed to meet the perceived needs of external interests. As Alexander and Yiftachel (1997: 275) have noted:

> ... governments in most multi-ethnic settler societies have opted to use a range of control mechanisms against homeland indigenous minorities. These mechanisms have typically de-territorialized the minority, made it economically dependent on the majority and on the State, and excluded members of the minority from the centres of political power and policy making processes.

The creation of frontier or peripheral areas has also worked to eliminate indigenous claims to land and resources when in conflict with national priorities. This local-state conflict has been highlighted when indigenous peoples are faced with industrial encroachment, socio-economic development initiatives, and profit accumulation efforts by the state (Taylor 1995). According to Fenster (1997: 291) this has been the case in areas like the Canadian Arctic, Alaska, the Northern Territories in Australia, the former Soviet Arctic and many other frontier areas where indigenous peoples struggle to maintain traditional lifestyles. Because these traditional patterns of livelihood are seen as outmoded in the context of the modern industrial society, it follows that these groups are regarded as incapable of making informed decisions concerning their own affairs, which includes the management of their own territories and resources (Hedican 1995: 67) Thus the attitude of the state that aboriginal peoples are unable to act in their own best interests becomes entrenched in "tautological schemes of rationalizations that are subsequently enacted in various policy directives" (Hedican 1995: 67).

However, a theoretical understanding of contemporary internal frontiers would be incomplete without recognizing the ever-changing pattern of state-indigenous relations. In the context of the policy approaches addressed above, state policy that continually subjugates minority populations rarely remains unchallenged. With a changing socio-political order, pressure has intensified from the local-global levels calling for a restructuring of the modern (post-modern) state. As the Brundtland Commission's report on *'Empowering Vulnerable Groups'* (1987: 115-116) has stated:

> The starting point for a just and humane policy for such groups is the recognition and protection of their traditional rights to land and other resources that sustain their way of life - rights that may be defined in terms that do not fit into standard legal systems. These groups' own institutions to relegate rights and obligations are crucial for maintaining the harmony with nature and the awareness characteristic of the traditional way of life. [Action] must also give local communities a decisive voice in the decisions about resource use in their area.

Most significant to this research is the proliferation of aboriginal (local, national, and international) involvement to challenge and modify existing state policy. This dialectic approach assumes that the biases of the social institutions reflect the interests of the dominant/majority class but recognize the potential available to minority populations if they become sufficiently organized to wrest control or to challenge the control of the state (Whitt 1982: 22).[15]

The re-structuring of state-indigenous relations is most commonly approached by incorporating the involvement of the indigenous population in the planning process as a means of dialogue. Participation in the development and management of indigenous homelands is being acknowledged as an integral right and a necessary factor in dictating the future of the environment of indigenous peoples. Therefore, trust between states and indigenous peoples can only develop through practices which allow for elements of mutual involvement and cooperation, recognized as a basic human right.

3.2 The Human Ecological Niche

The concept of the ecological niche plays a central role in this analysis. For the purpose of this research the ecological niche will be framed as "the place of a group in the total environment, and its relation to resources and competitors" (Barth 1956: 1079). According to Bates (1998: 33):

> Every society must adjust to the presence and activities of neighboring peoples just as it must adjust to variations in local resources....Competition for resources will [therefore] arise where those resources have been given a high intrinsic value and are distributed throughout a clearly bounded area.

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[15] According to Whitt (1982: 32), if the class-dialectic model is correct, the study of an important political issue should reveal: 1) biases of social institutions that favor the outcomes beneficial to the dominant classes; 2) evidence of latent class conflict (divergent interests) or observable class conflict over the issue, perhaps including intraclass conflicts among the dominant class, but accompanied by attempts to achieve class unity and cohesion; 3) political alliances and stability of power relations that are historically contingent, reflecting the need to respond to inter- and intraclass conflicts and structural crises, and; 4) outcomes that usually favor dominant class interests, but may also reflect the power of opposing classes and the limitations imposed by structural conditions.

The concept of the ecological niche has been a widely and inconsistently used concept in anthropological research. Odum (1959), followed by Geertz (1963), has compared the niche to the profession or a way of life of the organism while noting that the habitat is equivalent to its address. Coe and Flannery (1964) define the niche, or microenvironment, as a culturally and physically delimited segment of the gross habitat that contains a resource or set of resources used by a human population, such as an estuary, grove, or cultivated field. Similar to Coe and Flannery's microenvironment, Barth defines the niche as a position in the environment as if it were a segment in the human habitat. However, Barth's departure from Coe and Flannery is in his emphasis on human relations within the delimited environment. This ecological interdependence takes several different forms for which Barth constructs a rough typology. According to Barth (1969: 19) where two or more ethnic groups are in contact, their adaptations may include: 1) the groups may occupy distinct niches in the natural environment and be in minimal competition for resources; 2) they may monopolize separate territories, in which case they are in competition for resources and their articulation will involve politics along the borders; 3) they may provide important goods and services for each other (i.e., occupy reciprocal and therefore different niches but in close interdependence; and, 4) the two groups are in fact in at least partial competition within the same niche. It is Barth's contention that this type of relationship will ultimately result in the displacement of the subordinate group, or an accommodation involving an increasing complementary or interdependent relationship will develop. Used in this manner, Barth's multi-dimensional concept of the human ecological niche renders the niche concept of great value to this research and to the study of human ecology in general.

The environment with which we are concerned consists of two basic niches for adaptation. The first is the niche of the Whitefish Lake community, which consists of the living conditions that promote a particular way of life (i.e., hunting, fishing, trapping, and gathering). The second niche consists of the natural resources (i.e., timber, minerals, oil/gas) that are exploited by the industrial society. Using Barth's concept of the niche I am distinguishing the differential use of resources by each group within the same geographical area. The adaptive strategy of one group must therefore consider not only the characteristics of the physical environment but also the strategies employed by neighboring competitors (Bennett 1969). Although these groups are not directly competing for the same ecological niche, the exploitation of one niche by the dominant group (state/industry) will to a large extent affect the other, resulting in a direct alteration of that particular way of life (Barth 1956; Helm 1962; Svensson 1983; Bates 1998).[16]

> Men do manipulate their environments; they are not merely determined by it. This manipulation ... can have various results. It can lead to a more secure economy, but it can also lead to the exhaustion of resources (Bennett 1996: 19).

The competing interests that function within this delineated environment also constitute two distinct forms of economy that are based on diverging forms of sustainability. The industrial society, whose interests emphasize profit maximization and economic gain, tend to be guided by the normative values of the group; that is, economic growth is essential. For the Cree of Whitefish Lake, interest in the land base is not solely motivated by their need for a collective means of subsistence, but is also intimately linked to the landscape as it has come to define their collective and individual identities.

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[16] Grambling and Freudenburg (1996:362) use the example of how large-scale strip mining operations in Wyoming will use a given niche in a very different way than ranchers who live in the same region - or for that matter, than those who would prefer to see the same area devoted to hiking, wildlife refuge, or subsistence - but the differing forms of resource use can differ widely in the extent to which they permit a given area to be used by others, whether at the same time or subsequently.

Within this delineated environment exist a number of competing interests that have influenced the land and resource use of the WFLFN. As a result, each of these interests have individually and collectively influenced the adaptive strategies of the WFLFN. These interests include:

3.2.1 Forestry Activity

Timber extraction in the Whitefish Lake area first began in 1970 with the first Timber License being awarded to a local contractor. However, it was not until 1988 that serious interest was given to the area as a primary source of both deciduous and conifer timber. With the encouragement of the Alberta provincial government Yuen Fung Yoo (YFY) Paper Company from Taiwan proposed the first pulp/paper complex to be located in the community of High Prairie (approximately 76 kilometers southwest of Whitefish Lake). YFY's proposal was well received by provincial land managers enabling YFY to issue debentures in American markets to finance the facility. However, owing to a number of internal reasons, YFY's proposal failed to materialize forcing the province to "advertise" in an attempt to attract another forest products industry.

Tolko Industries Ltd. based in Vernon, British Columbia was the successful bidder for the High Prairie Timber Development Area (TDA) and was subsequently awarded the deciduous rights to the area in 1994 (Tolko Industries Ltd. - Preliminary Man. Plan. 1997:

2-1). Construction for the Tolko pulp/paper mill began in 1994 and was completed in 1995. Following the mill's completion and successful negotiations with the province, Tolko, in 1997 was awarded a Forest Management Agreement (FMA) covering most of the TDA lands, including lands that represent the traditional territory of the Whitefish Lake First Nation. The annual allowable cut for this area is 160,000 m^3 per year which is equivalent to approximately 555.5 hectares of forested land harvested annually.[17] [18]

3.2.2 Oil/Gas Development

The rise of the oil and gas industry in Alberta was initiated through the discovery of oil in the County of Leduc, just south of Edmonton, in 1947. With this discovery the oil and gas industry in Alberta (and to a large extent western Canada) sprang to life. Soon after the Leduc discovery, many of the world's largest petroleum companies began investing in the exploration and development of Alberta's crown lands.[19]

Whitefish Lake residents recalled their first encounters with oil workers in the mid-1950s. Arriving in "large trucks", workers began clearing exploratory seismic lines on the north shore of Utikuma Lake (lines that would soon zigzag the entire Whitefish Lake territory).[20] Because road access to the Whitefish Lake territory was seasonal, and to a large extent quite variable, barges were used to transport both men and machinery across Utikuma Lake to reach it's north shore. Because of the difficulty in travel, as well as the expense associated with the development of this still remote area, only a few wells had been established north of Utikuma Lake. However, by the 1960s, seismic activity and road access had begun to reach some of the most remote areas of the Whitefish Lake territory.

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[17] Zeidler Forest Industries has been awarded the rights to 35,000 m^3 of incidental deciduous timber which is included in the 160,000 m^3 available for harvest in the S-9 Forest Management Unit..

[18] Based upon a 80 -120 year yield curve (Tolko Industries Ltd: Preliminary Management Plan B: 1996).

[19] Of these investors only twenty percent had come from Canadian-based companies (Espiritu 1997: 51).

[20] This was a memorable occasion for many of the Whitefish Lake elders because the only other vehicle seen prior to this time was an occasional visit from the resident priest of Grouard.

By the mid-1960s, exploration in the Whitefish Lake territory took a giant leap forward. With the completion of an all-weather road that extended north from the community of Slave Lake (now Rt. 88), a network of industrial access roads soon spread throughout the north and north-east portions of the Whitefish Lake territory. Resulting from the heightened exploration, the Nipisi Oil Field was discovered and went into operation in the winter of 1966-67. Located just east of Utikuma Lake, the Nipisi Field represents one of the most productive fields in north-central Alberta. Housed on the Nipisi Field are several hundred wells supported by approximately 600 miles of industrial access roads and an equivalent amount of seismic lines and pipelines.

Since their first encounters with oil workers in the 1950s, Whitefish Lake residents have witnessed their landscape transformed to meet the needs of external interests. Within the traditional territory of the WFLFN now exist approximately 875 petroleum wells, 127 petroleum depots and a supporting infrastructure of primary and secondary access roads, pipelines, electrical powerlines and seismic lines. To compound the effects of this developing infrastructure, "No Trespassing" signs have been posted, warning local residents of these private industrial areas. Seeing their lands divided into leases, and allocated to resource developers, it has become increasingly apparent to the residents of Whitefish Lake that their cultural landscape has gone unrecognized by the industrial developers operating within the homeland of the WFLFN. More importantly, it is clear that this is unrecognized by the provincial government.

3.2.3 Resource Competition

A residual effect of the industrialization of the Whitefish Lake territory has been the development of an extensive infrastructure of primary and secondary access roads, right-of-way corridors, and seismic lines that have effectively opened up and made accessible even the most remote areas of the Whitefish Lake territory. As a result of the increased accessibility Whitefish Lake residents have experienced increased competition from non-aboriginal hunters over declining populations of 'game' species (i.e., moose, mule and whitetail deer, and black bear).

While many of the non-aboriginal sportsmen travel from the nearby communities of Slave Lake and High Prairie, a growing number are being attracted from Edmonton, Red Deer and Calgary. Further, non-aboriginal outfitters are attracting a growing number of U.S., European and Asian sportsman who have further "saturated the backyard" of the WFLFN with additional hunting pressure (NMMPPR 1998). Within the Whitefish Lake territory there are approximately 15 moose outfitters and 21 black bear outfitters currently in operation (Heckbert, pers. com. 1999a).[21]

WMU[22]	544	542	520	Total
Black Bear	60	129	90	279
Moose	22	58	60	140
Mule Deer	3	0	10	13
White-tailed Deer	10	4	7	21

Table 3. Outfitter-Guide Allocations (1998-2003)
(Heckbert 1999b)

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[21] The number of outfitters operating in a given areas is subject to annual fluctuations owing to the current allocation system allowing for permits to be individually bought and sold among registered outfitters.

[22] The traditional territory of the WFLFN is provincially managed as three distinct Wildlife Management Units (WMU 544, 542, 520).

While harvest figures for guides and outfitters can be tabulated it has proven difficult to ascertain accurate figures for a total harvest of game species owing to the limitations common to survey methodologies.[23] Because of this, total harvest figures can only be estimated. However, since 1993 the Natural Resource Division of Alberta Environmental Protection has initiated the Northern Moose Management Program (NMMP) in response to concerns expressed by aboriginal and sport hunters regarding the declining moose population in northern Alberta. Funded through the Fish and Wildlife Trust Fund, the NMMP is developing and enacting measures in an effort to reverse the declining moose population that ranges throughout the Whitefish Lake territory.[24]

WMU 544, 542, 520	1997	1996	1995	1994	Total
Moose	322	209	306	280	1117
Black Bear	X	16	51	35	102
Mule Deer	17	0	28	15	60
White-tailed Deer	85	48	123	141	397

Table 4. Sport Harvest Data
(Heckbert 1999b)

3.2.4 Gift Lake Metis Settlement

In the context of aboriginal land conflicts, the Alberta Metis Settlements represent an anomaly in Alberta. Only in Alberta have the Metis succeeded in establishing their own communal land base.[25] Through the Metis Betterment Act of 1938/40 more than 500,000 hectares of communal land have been provided along with hunting and fishing rights, socio-economic benefits, and health programs for Metis residents (Notzke 1994:186). Under this Act, twelve settlements were established (of which eight remain) throughout Alberta. The Gift Lake Metis Settlement represents one of the those land bases.

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[23] According to Alberta Wildlife Biologists in High Prairie, in past years there have been problems with low percentages of hunters surveyed during the questionnaire period. This results in lower reported harvest levels for game species. However, Alberta Environmental Protection is working to improve the situation by increasing the number of community groups surveying hunters.

[24] In an attempt to do so the NMMP has called for the General Moose Season in the Whitefish Lake territory be replaced with a limited entry draw in an effort to reduce non-aboriginal/non-local hunters.

[25] In the 1940s, Saskatchewan administered lands to the Metis on a much smaller scale than Alberta through general land and welfare legislation.

The Gift Lake Metis Settlement is located directly west of Utikuma Lake, bounded by Peavine Metis Settlement to the west and the Whitefish Lake Reserve (R. 155) to the east (see Fig. 8). The land base that was established for Gift Lake residents comprises a 83,916 hectare (207,273 acres) area. This land base is approximately 839 km^2 (324 mi^2) and represents the second largest Metis Settlement in Alberta (McCully and Seaton 1982: 16).

Despite First Nation treaty rights of "hunting, trapping, and fishing for game and fish for food at all seasons of the year on all unoccupied crown lands and any other lands to which the said Indians may have a right of access", Metis settlement lands have been classified as private lands administered by the province, thereby removing them from First Nation access. The establishment of the Gift Lake Settlement subsequently removed 839 km^2 of land and resources from the use of Whitefish Lake residents despite its representing a significant portion of their traditionally used and occupied territory. This issue has contributed greatly to antagonistic relations that at times exist between the two communities and has fostered a sense of territoriality along their shared borders.

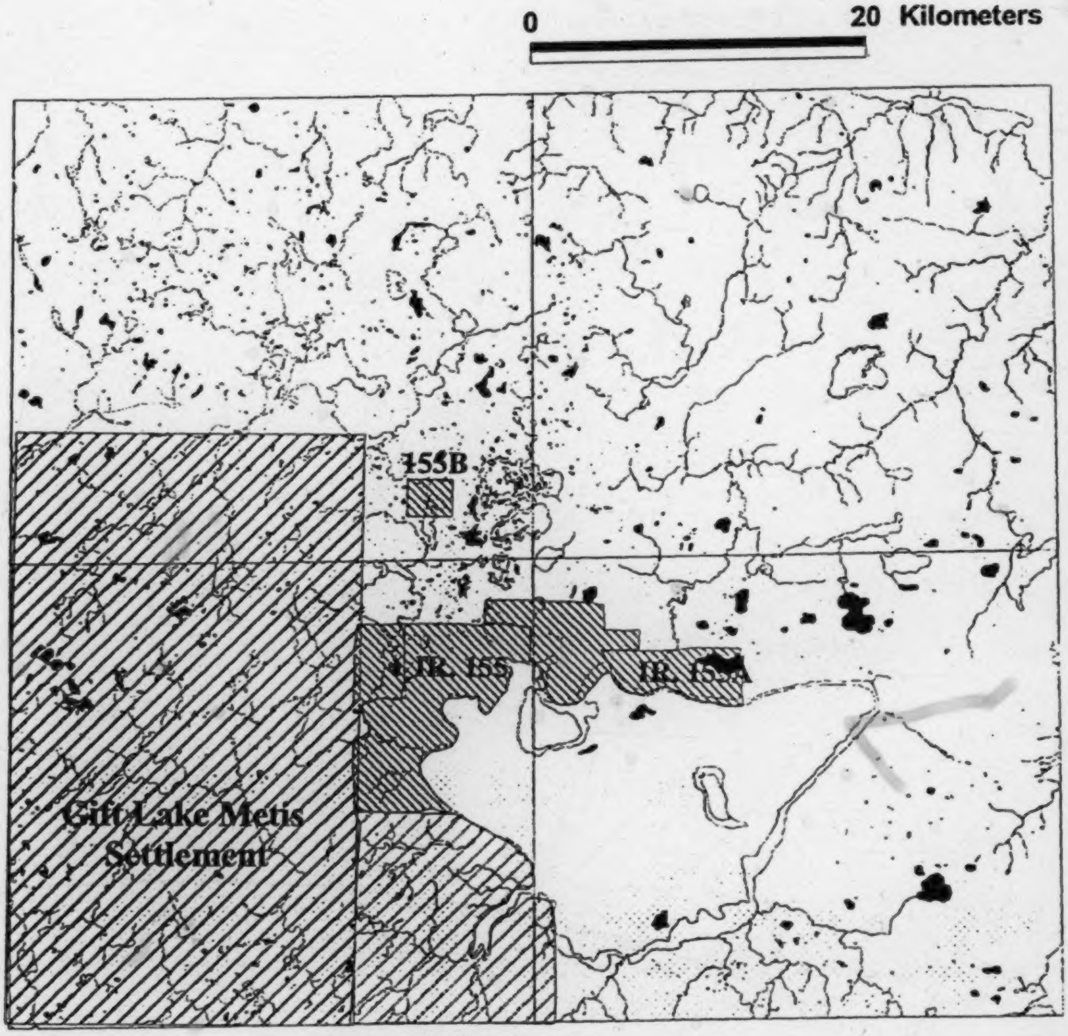
0
20 Kilometers
155B
IR. 155
IR. 155A
Gift Lake Metis Settlement

Figure 8. Gift Lake Metis Settlement

3.3 Adaptive Behavior

> Human behavior is shaped by uncertainty (Hanna and Jentoft 1996: 49).
>
> The entire purpose of social institutions is built around the reduction of uncertainty (Ostrom 1990: 39).

The ecological approach chosen in this research emphasizes adaptive behavior that evolves in response to uncertainty and increased competition over the use of, and access to, resources. Ostrom (1990), and others (e.g., Berkes and Folke 1994; Hanna et al 1996; Holling et al 1998), have referred to this adaptive behavior as a society's cultural capital, which refers to factors that provide human societies with the means to adapt to the natural environment as well as to actively modify it. Consistent with the definition employed by Honigman (1983: 150), adaptive behavior is a process whereby an individual or group acts to seize opportunities and resources available in both the social and physical environments. It is the problem solving mechanisms in human behavior that facilitates a dynamic approach to environmental interaction.

As a subset of cultural capital, Hanna and Jentoff (1996: 41) have included institutional capital to represent the stock of rules and underlying organizational skills that coordinate a group's use and access to natural resources. Used in this manner, institutional capital represents the organizational means by which a society can effectively modify its evolving socionatural[26] environment. The term adaptive capital has also been used to describe this capacity, but as Berkes and Folke (1994) have noted, the use of adaptive capital often fails to describe adequately a group's potential not only to adapt to, but also actively modify its socionatural setting.

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[26] Bennet (1976) refers to the socionatural system as the ongoing relationship between human activities and environmental phenomena in which humans provide the goals and the means.

According to Holling et al (1998: 349) the locally evolved knowledge base used by group members, and the worldview and ethics that underpin the societies in question are all part of the cultural capital of a society. Thus the concept of adaptation or cultural capital extends beyond the biological realm to include behavior that is subject to interpretation by cultural values, including a judgmental dimension in addition to the survival or need-satisfying functions (Bennett 1996). Cultural capital, therefore, includes qualities that can be found in operation in any dimension, including: demography, social organization, economy, technology, and cultural values (Bennett 1969). The adaptive strategies of Whitefish Lake have therefore been ordered by competing conditions of settlement, patterns of land tenure, economic systems, and the differing culture styles that are found nested within a common geographical landscape.

An adaptive capacity does not, however, guarantee success. Rather, adaptation represents a behavioral stage that can be evaluated as being ultimately successful or unsuccessful in both the long and short term. If perceived as being unsuccessful a new process may be initiated bringing alternative strategies into play (Honigman 1983: 150). If, however, adaptation is perceived as successful a period of stability may occur thereby promoting the adoption of similar behavioral changes (i.e., institutions) among others who perceive it to be to their own advantage and interest.

Adaptive strategies, used in this sense, are viewed as processes involving informed decisions based upon one's previous experiences, as well as the experiences of others, when making judgments about uncertain outcomes. Given the substantial uncertainty associated with any change, groups/individuals are less likely to adopt unfamiliar strategies than they are to adopt strategies used by others in similar circumstances that are known to have been successful (Ostrom 1990). As Young (1982: 94) has noted:

> Existing institutional arrangement ... are familiar constructs while new arrangements require actors to assimilate alternative procedures or patterns of behavior and to accept (initially) unknown outcomes.

In a highly competitive environment, groups/individuals who fail to incorporate strategies that may enhance their net standing will ultimately lose out to those who are successful in adopting better rules, strategies, and institutions (Ostrom 1990). Such cultural adaptability relates directly to behaviors which can enhance a group's ability to cope with, as well as initiate change.

The process of adaptation, however, possesses a certain level of contradiction in relation to collective and individual behavior. That is, what may be adaptive - good - for an individual may be maladaptive - bad - for the group and/or the environment in which that groups exists, and vice versa (Bennett 1996: 50). Thus, what may be adaptive for the WFLFN may be maladaptive for competing interests (i.e., resource developers); conversely, what may be adaptive for competing interests may be maladaptive to the WFLFN. The possibilities are multiple and it is this multi-dimensionality or multi-potentiality of human actions that creates one of the central issues for analysis in this research.

Summary

This research has adopted a theoretical approach to human-political ecology which combines the concerns of ecology and political economy to encompass the constantly shifting dialectic between community and land based resources (Andreatta 1997: 438). Such an approach, therefore, requires the consideration of both the biological and physical elements of the environment, as well as the multi-cultural elements active within that same landscape. Thus to understand the implications of change in such an ecosystem, one must consider the distribution of resources along with the cultural groups with whom one competes and/or cooperates (Svensson 1983: 215).

There are undoubtedly numerous theoretical approaches that could be applied to an adaptational analysis. As such one could not refute the use of alternative theoretical approaches. Because the merits of alternative approaches lie beyond the scope of this analysis this chapter has presented the theoretical basis considered most relevant to this specific research. However, owing to the breadth of literature devoted to the subject (i.e., resource management conflicts) additional contributions have been used throughout this analysis. A review of this literature is presented in the following chapter.

4. Literature Review

Introduction

> A society's survival is ultimately dependent on the finite capacity of an ecosystem to support it with essential resources and ecological services. To secure human well-being, there is an urgent need to design institutions that safeguard this dynamic capacity (Folke et al 1998: 433).

The focus of this research is on land and resource management institutions that have been developed over a period of time to serve the evolving needs of resource users. As Young (1982: 106) has noted, resource management institutions are not static constructs even after they are fully articulated. Rather, resource institutions undergo continuous transformation in response to their own inner dynamics as well as to changes in their political, economic, and social environments. Thus contemporary land and resource management systems should not be considered an end-point in their institutional evolution, but rather as a stage of development in their perpetual transition.

This chapter provides a review of the literature that has contributed most directly to this analysis, including: land tenure and common-property institutions; co-management arrangements; institutional change/evolution; and the application of traditional ecological knowledge in the management of lands and resources.

4.1 Land Tenure and Common-Property Institutions

Common-property theory has become a multi-disciplinary interest for coming to understand the success and failures of regulatory systems in the sustainable use of resources (e.g., McCay and Acheson 1987; Berkes 1989; Ostrom 1990; Berkes and Folke

1998). Forged from the "tragedy of the commons" scenario put forth by Garrett Hardin (1968),[27] this model has come to symbolize the degradation of the environment whenever multiple users exploit a common and finite resource. In using the example of sheep in a pasture, Hardin proposes that since individual herders are motivated by economic gain they will continue to increase their number of sheep out of self-interest despite the carrying capacity of the pasture. By adding sheep to his/her flock the herder receives an immediate economic return while accruing a delayed, as well as a shared, cost from the deterioration of the commons from overgrazing.

In this analysis, Hardin makes two primary assumptions: 1) resource availability is limited, and; 2) people will undoubtedly act out of self-interest. According to Hardin (1968: 1,244):

> Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit - in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons.

Hardin's first assumption of the limited carrying capacity of a finite resource is an assumption rarely questioned. However, self-interest as a component of human nature has not gone without challenge. First, critics (e.g., Berkes 1989; Ostrom 1990; Feeney et al 1990) have pointed out that not all commons, let alone cultures, are the same. This in turn affects the way commons are perceived and therefore managed. Second, different cultures have different ways of dealing with the question of the commons (i.e., unregulated, socially regulated, or adherence to religious taboos). As Durkheim (1964) has noted, local communities have long developed rules concerning the use of natural resources based upon social values and norms that stress moderation, reciprocity, and prudence rather than excessiveness and overindulgence.

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[27] Hardin, Garrett 1968. The Tragedy of the Commons.
Article based on a presidential address presented before the meeting of the Pacific Division of the American Association for the Advancement of Science at Utah State University, Logan, 25 June, 1968.

Despite the simplification of Hardin's model, much of the current common property literature has been directed towards the divergence between individual and collective interests, and the tendency of individuals to free-ride and behave opportunistically (e.g., Young 1982; Berkes 1989; Ostrom 1990; Berkes and Folke 1994; Jansson et al 1994; Hanna et al 1996). To overcome the potential free-rider scenario, two theoretical approaches have been developed to explain the management of the commons. The first has been through the centralized control of the commons. Proponents of centralized control suggest that an external agency (government) serves best in deciding the most appropriate strategy for managing the commons. That is, the state should decide who can have access, when access will be permitted, as well as the ability to impose sanctions on those who exercise self-interest over the interest of others.

The second approach for managing the commons sees privatization, as an exclusive property right, as the most appropriate means of sustaining the commons. Through well-defined property rights the long-term sustainability of the commons will ultimately be enhanced because it is in the best interest of the owner to do so. According to Smith (1981: 467), "the only way to avoid the tragedy of the commons in natural resources and wildlife is to end the common-property system by creating a system of private property rights." Through privatization one will effectively avoid inefficiency and the over-exploitation of the resource.

However, the privatization of the commons has the potential to introduce its own set of problems depending on the type of resource being managed. For example, when range lands become uneven because of variable rainfall a herd may starve owing to its inability to move to a more productive pasture. This proved to be the case in Botswana during the 1980s, where the privatization of range land was seen as the solution to range degradation, yet the implementation of a privatization policy proved to have undesirable effects for both herd and herder without demonstratable ecological benefits (Uphoff 1986: 34). Similarly, the privatization of forest reserves has the potential to lead to over-harvesting if an attractive market price makes it advantageous to exploit the resource for an immediate economic return. Thus the private ownership of the commons may lead to an abuse of resources in two ways: 1) if low risk investment alternatives encourage a rapid exploitation of the resource, or; 2) resource holdings are too small to provide an adequate standard of living, and users feel forced to run the risk of over exploiting the resource (Uphoff 1986: 35).

These scenarios have in many cases promoted a system of state control over resource use. However, as illustrated by our current institutional failures state management has its own challenges to overcome. As Ostrom (1990) has noted, if the optimal management of a resource is to be achieved by following the advice of a centralized authority, assumptions concerning the accuracy of information, monitoring capabilities, and sanctioning reliability must be assured. However, without valid and reliable information, a centralized authority can make several errors, including setting the carrying capacity or the sustainable yield too high or too low, non-responsiveness to ecosystemic changes, and inappropriately sanctioning or the non-sanctioning of resource users/abusers.

As state management systems become more rigid and less responsive to both resource dynamics and to the needs of the public, resource users become increasingly dependent on the state system, which has resulted in fewer options for self-reliance (Gunderson et al 1995: 508). This pathology has become increasingly apparent in resource management initiatives as seen in forest development, grazing systems, crop management, and fisheries management in recent years. As Gunderson et al (1995) have noted, the enhancement of salmon spawning through the use of fish hatcheries on the west coasts of Canada and the United States has quickly led to larger catches by both sport and commercial fisherman. However, this encatchment has triggered increased fishing pressure that has caused the less productive natural stocks to become locally extinct. This situation has left the fishing industry reliant upon a few artificially enhanced stocks whose productivity, in recent years, has begun to decline owing to unexpected oceanic changes. Consequently, through state management initiative west coast fisheries are reaching a point of crisis that has resulted in even greater state involvement and legislative control.

Under both state and private control, however, common-property management has emphasized a means to avoid the "tragedy of the commons" scenario through the establishment of common rules and procedures for limiting the over-exploitation of the commons. But as these examples show, neither state control nor the privatization of the commons have been uniformly successful in sustaining long-term productive use of natural resource systems.

There have, however, been many culturally diverse communities throughout the world who have developed and relied upon unique institutions that resemble neither the state nor private property systems to sustain resource use with reasonable degrees of success for long periods of time (Ostrom 1990).[28] The cultural variations in institutional evolution that reconcile common-property interests have been the focus of much of the existing common-property literature (e.g., Geertz 1963; Netting 1981, Ostrom 1990; Lansing 1991; Berkes and Folke 1998).[29] These studies have generally dealt with a specific resource base and the local (informal) institutions that govern them. The evolution of rules and self-regulatory mechanisms within these institutions have proven to have an adaptive capacity for sustainability and survival that, in many cases, have endured for centuries (Berkes and Folke 1994).

Interest in the success of these local management institutions has been compelled through the recognition of our own institutional limitations in managing the 'commons' and the search for new and viable alternatives to the models currently in operation. As a result, new methods of management are being investigated in an attempt to incorporate the best components of state control, private control, and local control systems. Stemming largely from the experiences gained in certain fisheries (e.g., Johannes 1989; Pinkerton 1989; Pinkerton and Weinstein 1995; Nietschmann 1995) and other common-property resources such as forests (e.g., Pinkerton 1998) and groundwater (e.g., Ostrom 1990; Bloomquist

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[28] Examples of these unique and long enduring institutions include the management system of Swiss alpine grazing meadows (Netting 1981); communal land management in Japan (McKean 1996); and Bali rice production systems (Lansing 1991).

[29] According to Berkes and Folke (1994) much of the recent interest in common-property institutions can be traced to the establishment of the International Association for the Study of Common Property (IASCP) (1989) and the publication of the Association's newsletter, *Common Property Resource Digest*.

1992), it has been recognized that what is needed is a more dynamic partnership using the capacities and interests of local communities, complimented by the ability of the state to provide enabling policies and legislation in facilitating co-operative approaches to sustainable resource management (Pomeroy 1997: 1). This approach has most recently been referred to as co-management.

4.2 Co-Management

The literature on co-management of lands and resources is relatively new and is therefore still evolving. Much of the relevant literature presents either the merits of co-management arrangements or discusses specific co-management regimes and their successes or failures in managing a common resource.[30] Research regarding the strategies involved in the development of co-management institutions is rather limited, with the exception of Young (1982), Ostrom (1990), Pinkerton (1989, 1992), and Prystupa (1998) who have offered theoretical propositions for the evolution of institutions and an analysis of co-management arrangements.

The establishment of co-management institutions, between aboriginal resource users and state resource managers, is a relatively new concept in regards to land and resource management. In general, there has traditionally existed a void between formal governance structures and local resource users in the context of resource management. Often this void is characterized as a confrontational or an adversarial relationship between the two. However, having recognized that the traditional top-down management philosophy often results in failure (both social and ecological) there has been a move to build upon, rather than displace, local knowledge systems and practices in the management of lands and resources. The most tangible result of this changing paradigm in resource management has been in the formation of co-management, joint-stewardship, or co-operative management regimes.[31] However, co-management should not be viewed as a single strategy to solve resource problems, but should be seen as a set of alternative management strategies, appropriate for certain resources and situations and not for others (Pomeroy 1997: 2).

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[30] For further review on the aspects of co-management in relation to particular resource areas see: Lloyd 1986; Usher 1986; Caulfield 1988; Feit 1988a, 1988b; Freeman and Carbyn 1988; Osherenko 1988; Doubleday 1989; Pinkerton 1989; Richardson and Green 1989; Johannes 1989; Feeney et al 1990; Ostrom 1990; Berkes et al 1991; Berkes 1993; Bloomquist 1992; Wolfe et al 1992; Stevenson 1996, 1997, 1998; Caulfield 1997; Berkes and Folke 1998.

In theory (Pinkerton 1989) co-management between local resource users and state resource managers improves the effectiveness and equability of the management institution. By sharing relevant information in regards to the management of lands and resources, co-management institutions are able to incorporate local knowledge into the management strategy, are more responsive to ecosystemic changes and the needs of resource users, and helps insure compliance of agreed upon rules and regulations (McCay 1996).[32] Osherenko (1988: 94) defines co-management as:

> An institutional arrangement in which government agencies with jurisdiction over resources and user groups enter into an agreement covering a specific geographical region and make explicit 1) a system of rights and obligations for those interested in the resource, 2) a collection of rules indicating actions that subjects are expected to take under various circumstances, and 3) procedures for making collective

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[31] The terms co-management and co-operative management will be used interchangeably to refer to an institutional process where local resource users, government representatives and industry share (at varying levels of authority) the management responsibility of lands and/or resources.

[32] This section addresses the positive aspects of co-management arrangements. Chapter Seven will extend this discussion by addressing some of the problematic aspects of co-management specifically as it applies to the adoption of foreign institutions into the cultural matrix of Aboriginal communities.

> decisions affecting the interests of the government actors, user organizations, and individual users. Co-management does not require government agencies to relinquish or transfer any legal jurisdiction or authority.

Caulfield (1997: 3) similarly characterizes co-management as a sharing of power and authority between resource users and the state, where agreed-upon principles, norms, rules, and decision-making procedures inform management practices. Notzke (1993:1) considers co-management as an innovative management regime that integrates local and state systems, allocates control of resources among competing interests, and facilitates the merging of knowledge systems. Kofinas's (1993: 3) analysis of co-management and its role in community economic development maintains that co-management is basically a power-sharing arrangement that aims to mitigate the cultural differences that exist between indigenous and state systems of resource management. Further, by establishing partnerships between government, industry, and aboriginal communities, long-standing cultural barriers can be overcome, thereby leading to a mutual awareness and an equitable approach in dealing with complex resource management challenges.

At the most fundamental level co-management aims to apply differing values and principles than those previously used to foster an awareness and practice for long-term resource stewardship. However, I consider it inappropriate to adhere to a single definition, owing to the varying levels of authority under which co-management institutions operate.

These varying levels of authority stem largely from the political context of the state (i.e., differing provincial/state land tenure systems), as well as the type of resource being managed (i.e., migratory or transboundary). In addition, co-management of lands and resources between First Nations and government is often a consequence of political and legal circumstances resulting from either a perceived resource crisis or arising from a specific land claims settlement; thus co-management institutions will vary accordingly.[33] Noting the differing levels of authority, Berkes et al (1991: 36) have constructed the following to illustrate the multiple levels of community involvement in co-management institutions (see Table. 5):

8. Community Control	When resources are managed locally, power is delegated to community; self-regulation.
7. Partnership	Partnership of equals between state and users; joint decision-making institution.
6. Management Boards	Community is involved in policy and decision-making about some objectives; board decisions are binding.
5. Cooperation	Use of local knowledge and community research assistants; some management activities are contracted to local groups.
4. Regional Councils - Advisory Boards	Partnership in decision-making may start; common objectives sought; advisory only, though government may be required to respond to non-binding recommendations.
3. Communication	Two-way communication begins; research plans begin to include local concerns.
2. Consultation	Community consulted on projects; feedback from research to community.
1. Informing	Users are informed about regulations; communication is one-way.

Table 5. Level of Co-Management Authority
(Berkes et al 1991: 16)

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[33] For further review of crises based agreements see Indian and Northern Affairs Canada: Porcupine Caribou Management Agreement (1985); Mathias Colomb First Nation - Manitoba Moose and Caribou Co-Management Agreement (1991); Xax'lip First Nation - British Columbia Joint Stewardship Agreement (1992); and the BarriEre Lake Trilateral Agreement (1993). For further review of claims based agreements see: the James Bay and Northern Quebec Agreement (1976); Government of Australia Aboriginal Lands Rights (Northern Territory) Act (1976); the Western Arctic Claim: Inuvialuit Final Agreement (1985); Umbrella Final Agreement for the Council of Yukon Indians (1993); and the Government of New Zealand Waikato-Tainui Deed of Settlement (1995).

Within the Canadian context contemporary co-management regimes operate at varying degrees of authority from region to region. As a result of the prevailing political constraints, co-management arrangements in the Canadian provinces operate under vastly different parameters then those being established, for example, in the three northern territories.

Within Canada's northern territories First Nations have secured a legally defined position at the negotiation table through successful land claims settlements.[34] The political circumstances of the territories have given First Nations a strong voice in the management of their traditional lands and resources that remains lacking in the provincial setting.

Within the Canadian provinces, co-management regimes have yet to experience the same amount of success as their northern neighbors because of the lack of clearly defined rights that provincial First Nations can legally exercise over land and resources that lie outside of the established reserve boundaries (Campbell 1996:130). Owing to the provincial governments maintaining jurisdictional rights over off-reserve natural resources, co-management opportunities within the provinces must operate under vastly different parameters.[35]

However, at each level of operation, co-management arrangements have been promoted and influenced by common factors, including: conditions of resource uncertainty; demands from external interests (i.e., resource exploitation or demands on wildlife resources); and a growing Native presence in the state political arena (Kofinas 1993: 3)

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[34] For further review see Indian and Northern Affairs Canada *Western Arctic Claim* (1985) and the *Gwich'in Comprehensive Lands Claim Agreement* (1992).

[35] Dr. Milton Freeman has suggested that aboriginal involvement in provincial co-management arrangements may be more a strategy for "staying in the game" (i.e., maintaining a level of involvement) rather then a form of equitable power sharing (pers. comm., June 15, 1999).

This institutional capacity has been demonstrated by the Porcupine Caribou Management Board's (PCMB) efforts to halt oil and gas development on the calving grounds of the Alaskan Arctic National Wildlife Refuge (ANWR). By devoting substantial amounts of time and energy, the PCMB has been successful in shifting the focus from wilderness preservation to that of cultural survival, and has engaged Canada's Department of Foreign Affairs to voice community concerns through diplomatic channels (Kofinas 1993: 4). The ability of the PCMB to voice local concerns at the national and international levels stems directly from its establishment as a legally defined institutional arrangement that provides Porcupine Caribou users a well-developed venue for voicing and implementing community management objectives (Kofinas 1993: 4).

By defining the rights and needs of local resource users, co-management arrangements have proven successful in confronting external threats to resources and have minimized conditions of resource uncertainty. By becoming nested within the superseding state authority co-management institutions have the means to democratize land use objectives by incorporating local social and economic concerns into the management process. According to Kofinas (1993), such an approach in resource management creates a viable alternative for achieving sustainable and locally defined approaches to socio-economic progress.

4.3 Institutional Evolution

Gibbs and Bromley (1989: 22) maintain that the formation of institutional conventions provide a means by which a society defines its members' relationships to resources. Thus the evolution of resource management institutions represents an important dimension within the organization of human society by embodying a stock of established rules and organizational skills which coordinate human behavior (Young 1982; Ostrom 1990; Hanna et al 1996). In this analysis, an 'institution' is defined as:

> ...humanly devised constraints that structure human interaction. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behavior, conventions and self-imposed codes of conduct), and their enforcement characteristics. Institutions are the set of rules actually used (the working rules or rules-in-use) by a set of individuals to organize repetitive activities that produce outcomes affecting those individuals and potentially affecting others (Berkes and Folke 1998: 5).

As the above discussion on common-property theory has shown, the formation and structure of an institution are important considerations for the sustainable management of land and resources. By returning to Hardin's parable of tragedy, it becomes clear that it is not the inherent failure of the commons that is at issue, but rather it is the failure of institutions to control access effectively and to make informed decisions that leads to the degradation of common resources (Berkes and Folke 1998).

However, Light et al (1995) argue that institutional failure is a natural progression in the evolution of resource management regimes. That is, as management systems mature they become limiting and outmoded in meeting the evolving needs of resource users. Thus the failure of institutional strategies to adapt successfully inevitably leads to a period of perceived crisis in the resource management institution. This pattern, as described by Gunderson et al (1995) and others (e.g., Uphoff 1986; Berkes 1989; Ostrom 1990; Jansson et al 1994; Hanna et al 1996; Berkes and Folke 1998), involves a process that generally follows four phases, including: the over-exploitation of a resource, attempted conservation measures, resource crises, and the reconfiguration of the management institution. In this process, crises in resource management systems are considered an inevitable phase that signal a need for restructuring.[36] Consequently, the reformation of the institutional framework results in new goals, policies, and organizational processes that are then used to carry out new policy initiatives until the next crisis arises (Gunderson et al 1995: 492). Mary Douglas (1978) and Mike Thompson (1983) have similarly characterized institutional change/evolution as being driven by periods of stability and instability and the interplay that occurs between the two.

Examining cases of institutional failure and reformation, Berkes (1998) suggests that resource crises among the Cree of James Bay triggered a re-design of their traditional beaver management system. Berkes maintains that the contemporary Cree management system has evolved as a consequence of commercialization and periodic depletion from external competition since the eighteenth century by combining the traditional Cree beaver/land tenure system with European notions of management (Berkes and Folke 1998: 95).

In this example, a period of intense over-exploitation of the beaver population was brought about by a number of external factors, including: intense competition between the

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[36] It should be noted that crises do not always initiate a restructuring of management institutions. Schon (1971) refers to this resistance as "dynamic conservatism" or the tendency for institutions to fight to remain the same.

Hudson's Bay Company and the Northwest Company; railway expansion into the James Bay region (1920s); an influx of non-aboriginal, Ojibwa and Iroquois trappers whose lands had already been depleted; and the use of steel-traps and castoreum technology (chemical attractant), leaving the beaver population in the James Bay region all but depleted by the 1930s. The Cree, by their own account, also contributed to the over-exploitation. As Feit (1986) has noted, rather than allowing outsiders to over-harvest the beaver population, the Cree trappers abandoned their conservation ethic[37] and joined in the race for beaver pelts.

With the beaver population all but eradicated by the end of the 1930s, the James Bay Cree were left to reestablish their traditional management institutions and conservation ethics. However, aiding in the recovery was the Quebec government who, in cooperation with the Cree, established a beaver reserve to enhance recovery efforts; this excluded all non-aboriginal trappers from the area, and returned the responsibility for managing family hunting/trapping territories to individual "beaver bosses/stewards" (Berkes 1998: 113). The reformation of the management system resulted in the beaver population recovering by the 1950s and has remained productive up until the present.

Throughout this period the traditional Cree management system has evolved into an institution of collective leadership represented presently by the Cree Trappers Association (CTA). The foundation for this adaptation was formed by developing an understanding of the current socio-natural environment and by developing an institution that defined an alternative future for the Cree.

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[37] There is considerable debate in the anthropological literature regarding the existence of a 'conservation ethic' among the subarctic Cree. For further review see: Speck 1915; Feit 1973, 1987; Bishop and Morantz 1986; Brightman 1993.

Resource crisis, as seen in this example, resulted in the restructuring of socio-political strategies that led to a reformation of the institutional configuration. However, grounded in both the traditional management system and the contemporary CTA, Cree management continues to be best described as an evolving socio-ecological system in which local institutions are reinforced by community norms and values of conservation (Berkes 1998). Berkes and Folke (1994:128) maintain that the development of this type of management institution, one that involves a (formal/informal) governance of resource use and an environmental ethic/worldview, is crucial for the potential of a society to develop sustainable relations with its natural environment.

As this example shows, the Quebec government demonstrated a willingness to support the local institutional development of the Cree. However, in some political contexts, states may feel threatened by the strengthening of local institutions and may undermine, or at least fail to support local initiatives. Young (1982: 106) argues that the character of the institutional transformation will directly reflect the structure of the power prevailing at the time of articulation. However, Uphoff (1986: 217) has noted that, although the political orientation of the government will affect the climate for local institutional development, it is not a determining factor because central governments are seldom monolithic. That is, within the governmental hierarchy exist differing attitudes and motivations that will ultimately affect the evolution and formation of local level institutions. The central consideration, therefore, is to what degree the goals and objectives of the state are at variance with those of local communities. As Uphoff (1986:218) states:

> To the extent that national institutions desire for rural people what they want for themselves, building upon local capacity helps both the center and the periphery to advance their respective objectives.

Thus the goals at the local level need, to a certain degree, to be compatible with the goals of the state institution. If there exists a shared goal of community self-sufficiency rather than a continued socio-economic dependency, local institutions may find strong central support. If, however, local level goals come into conflict with state aspirations (i.e., conflict over revenues generated through the extraction of resources), support may be limited at best. Thus resource crises that achieve a certain level of support can serve as a catalyst for action leading to a new system of configuration involving the integration of new and traditional components. Therefore, political action has the potential to create a new vision of management in relation to existing resource institutions (Light et al 1995: 106).

While support in terms of financial resources is beneficial to local institutional development, more important is the quality of support given by the state authority to local initiatives. It is the decentralization of authority, the reliability of support, and the flexibility of the institutional structure that will ultimately determine local level success. A demonstration of respect by the state for the local accomplishments and a public endorsement of the local institution will directly and indirectly encourage others (i.e., industry) to accept them as legitimate institutions. The successful development of local resource institutions is therefore dependent upon a strong commitment by the state, as well as a shared sense of responsibility for shared objectives (Uphoff 1986: 219). Thus, successful institutional development involves the learning of new patterns of behavior that will result in an alteration of the way in which work is planned and carried out, from the local to the national levels.

4.3 Traditional Ecological Knowledge (TEK)

While the validity of TEK and its contributions continue to be questioned by those who adhere to the dominant paradigm of 'science', there is a growing trend whereby scientific knowledge is deemed insufficient to meet the holistic demands of environmental management (Ivanitz 1996).[38] By recognizing the utility of local knowledge systems, along with ascendancy of First Nation influence and political involvement, the practices that have contributed to the sustainable use of resources among indigenous peoples are now beginning to be recognized as a viable management method. Through an understanding of resource distribution, local perceptions of the functioning ecosystem, and the relationship between the environment and aboriginal communities, local knowledge systems are being integrated into the management process (Stevenson 1996). The recognition of TEK's potential contribution can be seen in its inclusion in co-management (crises and claims based) agreements which contain specific measures for its integration and application in the management process.

The recognition of indigenous knowledge systems in land and resource management is not, however, a recent revelation. Traditional ecological knowledge systems have long been recognized in ethnoscientific investigations (e.g., Rappaport 1967; Taylor 1969) and cultural ecology studies (e.g., Steward 1955) and continues to represent a central approach in coming to understand culture-nature relations. Malinowski

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[38] The word traditional is used to refer to historical and cultural continuity, recognizing that societies are constantly redefining what is considered 'traditional' (Berkes and Folke 1998: 5)

(1954) maintained that the empirical observations of pre-industrial societies were as much a part of their scientific understanding of the environment as were religion and magic. Levi-Strauss (1966) refers to the "science of the concrete", emphasizing the breadth of knowledge that pre-industrial peoples maintain regarding flora and fauna, as demonstrated through sophisticated and elaborate taxonomic systems. Bennet (1969), in a more encompassing approach, focused on the subjective factors (i.e., values, and norms) that influenced the adaptive strategies of a western Canadian agrarian community's involvement with the local social and ecological environment.

A more recent interest in TEK systems has moved beyond the nature of TEK to its potential application in contemporary land and resource management.[39] This recognition has spurred a number of studies dealing with TEK systems in the management of specific resources.[40] In general, these studies have shown that TEK has the potential to improve management strategies because of conservation measures and the sustainable use of resources that are ingrained in the knowledge base and the level of expertise that is provided through TEK with regard to local resource characteristics (Kuhn and Duerden 1996: 76). For this research, traditional ecological knowledge is defined as:

> ... a body of knowledge and beliefs transmitted through oral tradition and first-hand observation. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use. Ecological aspects are closely tied to social

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[39] For a review of TEK's application in the mining industry see: *NWT Diamonds Project, Report of the Environmental Assessment Panel*, Hull, June 1996, pp. 14-16.

[40] For further review, see: Brokensha et al 1980; Freeman 1985, 1992; East 1986; Freeman and Carbyn 1988; Andrews 1998; Feit 1988a, 1988b; Osherenko 1988; Johannnes 1989; Morell 1989; Pinkerton 1989; Richardson and Green 1989; Nakashima 1990, 1993; Doubleday 1991; McDonald and Flemming 1991; Bendickson 1991; Johnson 1992; Inglis 1993; Pinkerton and Weinstein 1995; Hanna et al 1996; Caulfield 1997; Stevenson 1996, 1997, 1998; Berkes and Folke 1998.

> and spiritual aspects of the knowledge system. The quantity and quality of TEK varies among community members, depending on gender, age, social status, intellectual capability, and profession (hunter, spiritual leader, healer, etc.). With its roots firmly in the past, TEK is both cumulative and dynamic, building upon the experience of earlier generations and adapting to the new technological and socio-economic changes of the present. (Dene Cultural Institute 1997).

In addition to specific areas of knowledge (i.e., knowledge related to species of wildlife, seasons, hydrology, and land use), TEK involves a system of understanding that incorporates social, economic, and spiritual dimensions. Thus TEK cannot be understood, let alone applied, without consideration of these hidden dimensions (Stevenson 1996: 281). Some of the social dimensions of TEK are captured in the following:

> Hunting, fishing, trapping, gathering, and herding continue to be sources of food, raw material and income. Moreover, they provide native communities with a perception of themselves as distinct cultures, confirming continuity with their past and unity with the natural world. Such activities reinforce spiritual values, an ethic of sharing, and a commitment to stewardship of the land, based on a perspective of many generations (IUNC\ UNCEP\ WWF 1991: 61).

Traditional ecological knowledge can be further understood as a system of knowing unique to a particular community, society, or ethnic group. It involves a people's understanding of local environmental structures and processes which have immediate relevance and application for that specific society in that particular environment (Lewis 1988: 18). Although traditional ecologies are inevitably local and are to significant degrees culturally relative, comparative analysis has shown that they represent similar techno-ecological solutions in adjacent areas and, in some cases, functional equivalents in quite different environmental and sociocultural settings (Lewis 1988: 22). Thus the application of local ecological knowledge extends well beyond local significance.

The application of TEK systems in the management of lands and resources has been most notably recognized in Kuhn and Duerden (1996):

TEK's Application in Land and Resource Management

- co-management arrangement
- land use planning
- development assessment
- resource management: agriculture, fisheries, wildlife, non-renewable natural resources, etc.
- environmental and social impact assessments
- cultural preservation
- conservation
- subsistence/traditional pursuits
- ecological consciousness
- basis for local decision-making
- role model in global environmental debate

Table 6. The Application of TEK in Land and Resource Management
(adapted from Kuhn and Duerden 1996: 73)

In addition to its application in land and resource management, the notion of renewing and documenting traditional practices has proven to be an effective political strategy for aboriginal peoples struggling for greater control of 'traditional' lands (Wolfe et al 1992:2). Tobias (1993) and Nakashima (1993) have shown how the recording of local ecological knowledge can serve as a puissant device in the political realm of state land and resource management. By documenting local ecological knowledge, and the long standing patterns of land use, policy makers are becoming cognizant of the extent of aboriginal land use and locally used methods of resource management. Thus the integration of TEK systems in the changing patterns of resource management can serve as an effective device by which aboriginal communities can achieve greater involvement in the management of traditional lands and resources.

Summary

Recognizing the limitations common to both centralized and privatized management regimes, institutional resource management is beginning to incorporate the knowledge and skills of local resource users, coupled with the enabling policies and legislation of state systems, to arrive at co-operative approaches to resource management. These varying and dynamic approaches to resource management have been compelled largely through the recognition of the limited capability of existing management systems to adapt effectively to ecosystemic change and the evolving needs of resource users. However, these co-operative approaches to management should not be considered an institutional end-point, but rather a phase in the perpetual transition of a social system; each unique in character and individually variable depending on the resource being managed, the political climate in which management occurs, as well as the differing strategies employed by resource users to enact institutional change.

The following chapter presents the research methods utilized to address these institutional variables. The methodology presented in this chapter represents both qualitative (i.e., open-ended questioning format, participant observations) and quantitative (i.e., GIS-ArcView land use analysis) approaches to analysis. These methods provide a spatial and temporal understanding of the conflict that exists within the Whitefish Lake territory, as well as providing a methodological framework for coming to understand the specific strategies employed by Whitefish Lake to enact measures of institutional change.

The following chapter concludes by addressing the challenges involved in representing accurately the cultural landscape of aboriginal communities in land use research.

5. Methods

Introduction

My involvement in the Whitefish Lake Co-operative Management Agreement stems from previous research conducted by Dr. Michele Ivanitz as partial fulfillment of her doctoral program in Anthropology while attending the University of Alberta (1996). Dr. Ivanitz's research was approached theoretically through applied/development anthropology, social forestry, and change. Specifically, the focus of her research was to develop an Implementation Plan that would facilitate the co-operative management of land and resources by the WFLFN and the province of Alberta. The development of this plan was to reflect a realistic co-operative management arrangement that would contribute to the reconciliation of scientific, bureaucratic, and traditional (local) ecological epistemologies (Ivanitz 1996).

My involvement in this process has existed on two levels. First, I was involved in the continued development and negotiations of the Implementation Plan initiated by Dr. Ivanitz.[41] Rather than serving as an active participant in the negotiation process my role was recognized as a purely academic interest motivated by the potential for co-operative management arrangements and the evolution of social institutions, rather than as an advocate for either party.[42] The recognition of this role by each of the stakeholders was critical to the ultimate success of my research. If my involvement with either party had been perceived to be anything but academic, access to the remaining stakeholders would surely have been limited. Recognizing early on that perception is for all intents and purposes reality, contact with stakeholder representatives was initiated immediately to obtain informed consent prior to any public involvement.

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[41] This Plan represents the framework for which the WFLFN and the Province of Alberta will cooperatively address issues of mutual concern. The Implementation Plan in presented in the following chapter.

[42] My interest in co-management of lands and resources stems largely from my involvement in 'crises-based' co-management arrangements conducted within the Yukon Flats National Wildlife Refuge in north-central Alaska. My specific involvement was in representing the United States Fish and Wildlife Service in coordinated efforts with the Alaska Department of Fish and Game and the Koyukon community of Steven's Village in the co-operative management of local fisheries in the Yukon River drainage.

In August of 1996 I was officially introduced to the Chief and council members of the WFLFN. This meeting was followed by several visits to the Whitefish Lake community to meet with the Whitefish Lake Elders' Advisory Committee, who play an integral role in the management and decision-making process of the WFLFN.

Consent was then obtained from representatives of Alberta Environmental Protection and Alberta aboriginal Affairs. This was followed by meetings with the local branches of Alberta Lands and Forests and the Fish and Wildlife Division of Alberta Environmental Protection in High Prairie. While in High Prairie I took the opportunity to meet with the Woodlands Manager of Tolko Forest Products to explain my future involvement as it applied to the co-operative management process and how it served my own academic requirements.

From these initial meetings my involvement has consisted of observing the negotiation process at the regional level and witnessing the implementation of these negotiations at the local level.[43] As a form of contribution I took on the responsibility of recording and distributing meeting minutes to the parties involved. This role has allowed for greater participation in and outside of the 'boardroom' which has provided additional insight to issues confronting each stakeholder.

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[43] The operational structure of the Whitefish Lake Co-operative Management Agreement consists of regional Implementation and Steering Committee meetings and local Working Groups. This operational structure will be addressed in detail in the following chapter.

A primary component of the original Implementation Plan developed by Dr. Ivanitz was the development of a traditional land use and occupancy study of the S-9 Forest Management Unit, which constitutes a large portion of the WFLFN's traditional homeland.[44] The development and completion of this study represents the second level of my involvement in the co-operative management process.[45]

Owing to the nature of this research, and the partnership approach that has been taken, access to the community of Whitefish Lake has been mutually advantageous. Because the benefits of the research have been recognized community wide, my presence has not been viewed as an intrusion but rather as a partner in the research process. To help facilitate the research effort, Whitefish Lake has provided on-reserve housing throughout the duration of the research.

5.1 Land Use and Occupancy Research

As noted above, the development and completion of a traditional land use and occupancy study with the WFLFN served as the primary vehicle for my involvement in the Whitefish Lake Co-operative Management Agreement. Popularized since the early 1970s, land use and occupancy studies have become an effective means by which aboriginal groups can present visually and collectively what has traditionally been held individually.

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[44] The S-9 FMU represents the land-base included under the terms of the original Whitefish Lake Co-operative Management Agreement.

[45] A contributing factor in pursuing this research was the opportunity to build upon land use research previously conducted with the Gwich'in community of Birch Creek located in north-central Alaska while completing my Masters degree from the University of Alaska, Fairbanks. The opportunity to work with the Whitefish Lake First Nation was an opportunity to gain a better understanding of indigenous land use and the knowledge systems concerning those landscapes.

Much of this research is available for public review within the popular literature (e.g., Ballentyne et al 1976; Freeman 1976; Brice-Bennett 1977; Brody 1981; Usher 1990), but in many cases the availability of this information is restricted to the aboriginal organization that initiated the research.

Aboriginal land use studies have generally been considered to have arisen from the socio-political context of the 1960s and 1970s. However, their beginnings can be traced to the traditions of Franz Boas (1888) who recognized that the recording of locally used place-names can be used to explicate the systematic nature of aboriginal land use. Through place-naming, it was recognized that land use patterns articulate the spatial and temporal continuum that exists between aboriginal culture and the traveled landscape. Place-naming has further shown to be an integral way in which to interpret and define land use and, in turn, explicate the relationship between the past and present, animate and inanimate, man and land (Lester 1979: 58). As Brody (1977: 318-319) has noted:

> The language of story telling and the naming of places convey the depth of Inuit tradition in Labrador. Places named in stories and myths are still places on the ground, and places are links to Inuit past through events, both real and fantastic, they are said to have occurred there. ... The land that is still in use, and upon which most Inuit still feel they depend, has names which show the magic of the place. This magic reveals that today's occupancy is a chapter in a long, long history that has no clear beginning and should have no end.

Julie Cruikshank (1990: 25) has made similar observations while documenting the life histories of Native women living in the southern Yukon. Cruikshank found that the stories that were told to her most often related to the land or specific geographical features of the landscape. These geographical features or locations included both names and events that tied people to the land in a manner which linked the past to the present.

Boas' second contribution was through the work of his students, specifically through the work of Frank Speck (1915) who, in Boasian tradition, recorded the ethnographic details of northern Algonquian hunting territories. The 'private property' debate that followed Speck's observations (e.g., Leacock 1954; Rogers 1963; Tanner 1986) initiated an interest in recording the hunting territories of other northern Algonquian groups (specifically around James and Hudson Bays). Originally this research was of a purely academic interest but it was soon recognized that the use of these maps could promote aboriginal assertions that traditional lands did not represent an unoccupied wilderness but rather a homeland for a people.

Since this time the evolution of land use research has primarily served two purposes. First there has been, and continues to be, a need to define geographical areas accurately as a basis of aboriginal land claims (as seen most recently in British Columbia). And second, there has been a growing need to articulate visually the conflict that exists, or may exist, between aboriginal land use patterns and resource development initiatives. Terms such as 'ethnocartography' and 'mapping for survival' have often been associated with mapping initiatives that are developed in response to aboriginal - industrial land use conflicts.

Several approaches have been used to document spatial land tenure systems in Canada. The Fort George Resource Use and Subsistence Economy Study (Weinstein 1976) combined land use data and subsistence harvesting research. The intent of this study was to determine the spatial distribution of harvesting activities of roughly 1500 community residents covering a geographical area of approximately 60,000 sq. km.. The harvest data that were collected were then converted into food weights. It was believed that such a process could accurately quantify the economic effects of the proposed hydro-electric project on local harvesting activities and resource availability.

Although this approach accurately quantifies the intensity of local land use, a number of deficiencies have been recognized. First, the study method failed to take into account variability and seasonality of wildlife resources common to the arctic and sub-arctic environment. Second, this method does not account for historical changes in land use and residency patterns of local residents, suggesting an ahistoric appearance of land and resource use. For instance, it was later determined that the geographic extent of James Bay and Fort George Cree land use was at an all time low during the early and mid-1970s (Weinstein 1993: 13).

Another approach, pioneered by Freeman (1976), has served as a model for most of the recent land use studies being conducted in North America (Brice-Bennett 1977; Brody 1981; Usher 1990, Hrenchuk 1993). The method uses a 'map biography' in which respondents are asked to locate and map harvesting or related activities during their adult lives (i.e., hunting, fishing, gathering). The community's land use patterns are then aggregated by map categories with outer areas representing boundaries and high density areas representing the spatial intensity of community land use. Additional areas of coverage included burial sites, travel routes, toponyms, and spiritual locations. Usher et al (1992) have argued that the map biography has become virtually the sole method used in

Canada owing to its straightforwardness in documentation, the visual effectiveness of the maps, and the perceived scientific objectivity derived from the survey methods.

Other approaches that have been used include the recording of oral histories and ceremonies to delineate land use and 'ownership' of specific territories, as in the case of the Gitksan - Wet'suwet'en and Nisga'a of northwest British Columbia.

For the purpose of this research, however, an additional method was employed. Commonly used since the Berger Inquiry, this approach combines local land use patterns with the mapping of proposed or existing industrial activity in order to assess the spatial aspects of conflict on traditional lands (e.g., Brody 1981; Fort McKay First Nation 1994). This approach consists of: 1) a map biography consistent with the methods developed by Freeman (1976); 2) the documentation of the system of land use (i.e., the adaptive strategies of WFLFN residents to the biological ecology of their traditional lands); and 3) the mapping and analysis of competing resource development and recreational harvesting of wildlife resources (Weinstein 1993: 22). This method, originally developed by the Union of British Columbia Indian Chiefs (UBCIC), has proven successful in cumulatively assessing the spatial conflicts that exist between subsistence activities and competing industrial resource development.

With an emphasis being placed on the use and occupation within a period of living memory, a range of local knowledge was sought. The areas addressed in this research consist of occupation sites, burial locations, archaeological sites, local place-names, traditional harvesting areas, trapline distribution, traditional and current trails, berry picking areas, and the distribution of commonly used medicinal plants and herbs. Further, information regarding the local furbearer population and the distribution, staging and nesting areas of migratory and non-migratory birds and waterfowl was sought.

Using this approach it was our intention to show that the knowledge held by community residents is based upon experiences that have been passed down from generation to generation. It is a multidimensional understanding of the landscape that can not be seperated nor considered mutually exclusive from the people who hold it.

Initial research began in August of 1996 with the WFLFN Elders Advisory Council to establish appropriate methods and protocols for the research agenda. This meeting was followed by a number of individual and group mapping sessions with council members in an attempt to refine our methodology further. Recognizing that an essential principle of land use and occupancy research is the adjustment of categories to conform to the experience and concepts of community residents (Usher 1990: 6), subsequent modifications were expected to arise during these initial sessions. These modifications were then incorporated into the interview protocols prior to community wide research. The majority of land use research was conducted while in residence at Whitefish Lake from May 15 to August 30, 1997 with subsequent steering committee meetings continuing on a regular basis throughout the duration of this research.

There are obvious challenges in land use research. Very often the information sought is of a highly personal nature. Because of this, community residents may be hesitant to share such information with an outsider. In other cases base maps may prove inaccurate. With the ever changing sub-arctic environment one would expect that the mental geography of community residents would naturally differ from base maps developed by government agencies years earlier. These obstacles can however be overcome. More important is the accurate representation of the complex relationship that exists between community residents and the landscape that constitutes their territorial identity. This approach requires the researcher, as Ingold (1987: 154) argues:

> ... [to] stop thinking about the land in excessively two-dimensional terms, as surface area. Regarded as a generalized, creative potential, land may just as well be condensed within particular locales, or distributed along particular paths. That is to say, it remains embodied in the properties of the landscape.

5.2 Interview Techniques

Combined with direct observation, the use of semi-structured and unstructured interview methods have provided additional information regarding the observed. The interview format was intended to be open-ended so as to allow for elaboration of the meaning and importance of resource use, the description of resource location as well as local perceptions of co-management (and the idea of managing resources in general). When acceptable a tape recorder was used as was note

It has been my experience that maps themselves serve as an effective medium to stimulate conversation. Reference to a specific location on a map will be made only to have the details of the map fade, transforming the map to a 'centerpiece' for which conversations are free to flow, gesturing only now and then back to the map but with no particular reference. It was at these times that the true significance of the 'land' was shared.

The interview sample sought in this research was complete coverage of those known to have the greatest knowledge and personal extent of land use. A total of 58 interviews were conducted with local residents. These included: 1) a complete coverage of the 25 registered trappers in the S-9 Forest Management Unit surrounding the Whitefish Lake reserves; 2) the inclusion of available male and female elders; and 3) knowledgeable hunters and/or fishers as recognized by community members. Thus a close approximation of the maximum extent of land use was established by interviewing a relatively confined sample of land users. Informal interviews were also conducted with 16 individuals from government, industry and environmental organizations. These included: Alberta Fish and Wildlife Service; Alberta Land and Forest Service; Alberta Environmental Protection; Intergovernmental and Aboriginal Affairs; Alberta Community Development; Indian and Northern Affairs Canada; Canadian Forest Service; Tolko Ltd.; Canadian Association of Petroleum Producers; and Ducks Unlimited Canada.

5.3 Participant Observation

A significant portion of my research involved participant observations. This included community events such as feasts and celebrations, community meetings, and daily activities (i.e., trips to town, meals, laundry). In addition to the routines of daily life I took part in seasonal subsistence activities such as: hunting, fishing, berry picking, and any related land-based activity that would provide insight to community land use. This involvement was seen as essential not only in documenting land use areas but more importantly to escape the western tendency to view the land in merely two dimensional terms, thus allowing myself to experience the embodiment and totality of the landscape.

In addition to land-based activities I was, and continue to be, involved in the activities of the Kee Tas Kee Now Trappers Association, which includes the First Nations of Whitefish Lake, Woodland, and Loon River. This association was formed to address many of the same issues as this research: that is, the effects of industrial development on aboriginal land use. My involvement with regional trappers has contributed to the research in two ways. First, I have gained a better understanding of regional concerns regarding industrial development. And two, I have been able to formulate a better understanding of territorial distribution among these First Nation neighbors. Both have proven essential to the successful completion of this research.

5.4 Data Quality

Concern for the quality and validity of the data collected has been at the forefront of my research. The control of data quality has included reflexive cycles of conceptualization, data collection and analyses, and write-up (Barzun and Graff 1992). My observations have then been compared to earlier fieldnotes to triangulate all data collected to insure that ulterior motives, reactive effects, and idiosyncratic factors had not influenced the research.

The chief sources for error in this research were likely to be recall failure, map recognition error, and translation difficulties. As there tends to be a strong cultural predilection for accuracy and truth in statements about land use, strategic bias was generally regarded as inconsequential (Freeman 1976; Usher 1990). Translation barriers were bridged through the assistance of council appointed assistants who are fluent in both Cree and English and are familiar with maps and community land use patterns.[46] To the extent that recall failure occurred it was expected that omissions rather than erroneously located information would be the result (Usher 1990). In these cases a second interview was conducted in an attempt to stimulate any additional recall.

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[46] In addition to completing a year of formal Cree language instruction at the University of Alberta I have received informal language instruction throughout the fieldwork experience.

5.5 Spatial Representation and Analysis

Based on preliminary workshops at Whitefish Lake it was determined that a scale of 1:100,000 would be used for mapping general land use patterns. For greater detail 1:50,000 was also used but based upon earlier workshops smaller scales were avoided as they proved unrecognizable to community elders. Because of this, on the land mapping sessions were conducted as often as possible to insure mapping accuracy and to alleviate any awkwardness respondents may have felt about working in an unfamiliar two dimensional environment.

Each map biography was then recorded on separate mylar overlays. Prior to digitizing each mylar was reviewed with the interviewees to note any ambiguities. Digitized output was then checked against the original individual and composite mylars to correct and insure entry errors did not affect the final maps, or the conclusions based on them (Usher 1990).

Computer based mapping was done in an ArcView system at the University of Alberta. Data was plotted on standardized topographic base maps digitized by Geomatic Canada at a scale of 1:50,000 and 1:100,000. The land use data from the WFLFN was then overlaid on the current industrial activity in the area along with the tentative 20 year Forest Management Agreement signed between Alberta Environmental Protection, Tolko Forest Products and Zeidler Ltd.. The use of the GIS system was an aid in determining what effects development may have on contemporary land use patterns while providing a visual illustration of the annual alteration of the landscape. In addition, the use of aerial photographs taken in 1949 and 1996 allowed for further analysis as to the spatial and temporal extent of development that has occurred within the Whitefish Lake territory over the past 45 years.

5.6 Implications in Land Use Mapping

Considerable attention has been given to indigenous land use information in the course of land claims settlements, resource development and assessment reviews, community economic base studies, and co-management arrangements. An inventory of indigenous land and resource use is being increasingly textualized and used by Native groups, industry planners, government agencies, and academic institutions. However, the documentation of local land use knowledge can result in a potentially exploitive situation if appropriate measures at the community level are not taken. Given the growing interest in land use information, the mis-appropriation of local ecological knowledge by external interests represents one of the major challenges confronting aboriginal communities involved in TEK research.

5.6.1 Objectifying Land Use Knowledge

Despite efforts to quantify accurately traditional and contemporary land use patterns, researchers have been methodologically limited in depicting the cultural significance of the land and the ideological images of these places in the maintenance of aboriginal culture. One of the primary challenges in land use research is to represent accurately the landscape in a culturally appropriate way that represents both spatial and temporal associations. According to Leroy Little Bear (1998: 18):

> ... Blackfoot, Ojibway, and Cree have known time and space to be the same thing since time immemorial. ... Our way of mapping our territory is through our stories. There is a story about every place. There are songs about each place. There are ceremonies that occur about those places. The songs, the stories, the ceremonies are our map.

The cultural landscape of aboriginal communities represents a mosaic of significant places, all with names and narratives attached that transform the physical embodiment of the landscape into a cultural process (Andrews et al 1998). However, the growing interest in aboriginal land use has often been grounded in conventional planning and resource management practices that have generally represented only the spatial distribution of physical features of the landscape. According to Petch (1998: 189-190), the acceptance by developers of certain sites as sacred has been limited to those which exhibit physical qualification. In these cases the symbolic and spiritual significance of a featureless site is difficult to convey as a material valuation and is often accepted as little more than sentiment.[47] As a result, land use research has often been reduced to a process of 'cultural triage', where the cultural (holistic) landscape of aboriginal communities is presented as a series of fixed coordinates or physical attributes distributed randomly throughout a vernacular environment.[48] Through this objectification of "memory-scape",[49] the multidimensional landscape of aboriginal peoples (land as cultural significance and places as ideological images) have seldom been accurately portrayed.

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[47] For further review of sacred landscapes see (Oakes et al 1998).

[48] The vernacular landscape represents the material attributes of the landscape, including the built form of a settlement and its natural setting including humans (Seleh 1998).

[49] This term is borrowed from Mark Nuttall (1992: 39) to represent a people's mental images of the environment, with particular emphasis on places as remembered places.

In the cases where aboriginal land and resource use is acknowledged, government/industry planners have often denied the existence of aboriginal ties to the land beyond the existence of these documented sites, sites which from the developers perspective might be grudgingly accepted as small pinpoints in an otherwise empty landscape (Lane and Chase 1996: 181). The general lack of understanding of Cree culture has entrenched an attitude within government/industry that the Cree relationship to the land is more or less site specific and of little heritage value (Ives 1982: 24). Despite efforts to quantify accurately traditional and contemporary land use patterns, developers have proven themselves to be unable to comprehend the cultural significance of the land and the ideological images of these places in the maintenance of Cree culture.

The local knowledge system of the Whitefish Lake community has been communally recorded and orally transmitted over countless generations. This system of knowing demonstrates a temporal depth that can not be textualized or mimicked by the fixed parameters of land use maps. As Morphy (1993) maintains, the value of landscape as a frame of aboriginal discourse is in its freedom from fixed positions and whose meaning is all-encompassing. It is this territorial identity that most often goes unrecognized in land use research.

5.6.2 De-contextualizing Land Use Knowledge

An additional concern in land use research is in the removal of local knowledge from community control. Once removed from the local context, land use information may be easily misrepresented or inappropriately used by external interests in ways that do not serve local needs and aspirations. By being accessible in a cartographic format, western land managers are able to elicit specific elements of local knowledge (e.g., moose yarding areas) and insert them into the western management model, thereby empirically removing aspects of the local knowledge system from its cultural context as well as eliminating any direct involvement at the local level. Further, once removed from local control, land use information may be used by industry planners to satisfy government requirements of incorporating local knowledge and involvement into the planning and assessment process, again excluding any actual community participation.[50] As Stevenson (1998: 6) has noted, by textualizing or transforming TEK into literate forms (i.e., Geographical Information Systems), the text becomes the authoritative source rather than the holders of the knowledge, thereby rendering control over access, use, and application to external interests.

One of the most valuable characteristics of local knowledge is its representation as an evolving and dynamic process that is continually being updated in order to adjust to ecosystemic change. However, presented in a two-dimensional medium local knowledge may appear static and appropriate for only certain times and places. By transmuting TEK into cartographic form it is decontextualized to conform to a scientific framework. This, as Kuhn and Duerden (1996: 78) have noted, represents a major cultural compromise, because by changing the medium in which TEK is transmitted (oral to literate) vital components of environmental knowledge are generally lost. Further, Hedican (1995: 68), has warned that by representing aboriginal land use patterns as static or unrefined, intervention by the state could then occur. This could be based on the need for improvement or replacement of a pattern of life which is seen as serving to keep the aboriginal minority in a state of poverty, thereby potentially contributing to dispossessing aboriginal peoples of the lands they are working to protect (Kulchyski 1998).

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[50] In an effort to assess the environmental, social, and economic impact of industrial activity on lands and communities, federal governmental guidelines have begun to require resource developers to incorporate the local knowledge of aboriginal peoples into an environmental impact assessment (EIA) review. Further, under the *Canadian Environmental Assessment Act*, First Nation involvement is required in the recording and documenting of traditional land use and heritage sites.

Because there is a growing reliance on land use research in the planning and assessment process, direct community involvement is required more than ever. It must be recognized that the knowledge presented in land use research is not separate from the people who actually apply that knowledge system. Therefore, if the cultural landscape of aboriginal peoples is to be presented in land use research it must be recognized that the textualized landscape comes with people and a culture attached.

5.6.3 Participatory Action Research

Recognizing that if the landscape of the WFLFN is to be presented in a culturally appropriate way, the cultural landscape must be extended beyond a series of codified sites. More important is the establishment of a process that conveys the complex relationship between the Whitefish Lake residents and the landscape that constitutes their traditional lands. To facilitate this process, capacity building initiatives at the community level are being developed which will ultimately enhance the involvement of the WFLFN in the land management process. As Kemp and Brooke (1995: 27) have noted:

> ... 'collecting' and 'documenting' indigenous environmental knowledge is in fact counter-productive. These knowledge systems have been under serious attack for centuries, and the social systems that support them have been seriously undermined.... It is not just a question of recovering and recording indigenous knowledge; it is one of respect and revitalization.

To promote this capacity, the WFLFN has assumed a participatory action approach to the research process in order to achieve an equitable role in the management of their traditionally used lands. Often, *Participatory Action Research* (PAR) methods have been equated with this type of approach. However, as Berardi (1998: 443) has noted, aboriginal communities must remain cognizant of the fact that PAR methodology can misrepresent 'participation' for what is still extractive research. That is, despite the label, unless a process is truly owned by the community, PAR initiatives can easily be co-opted by industry, government, and academic institutions who have very a limited notion of community participation. Used as a catch phrase, participatory research can be superficially applied by researchers holding firmly to traditional anthropological research methodologies.

However, the WFLFN has recognized that when properly exercised, PAR can serve as a capacity building process in itself. As Szymanski et al (1998) have noted, the role of PAR methods can facilitate the use of local knowledge as an integral part of land-use planning by linking the cultural, environmental and economic values as part of a community-driven decision making process. By employing collaboratively developed research designs, the views of community residents can be articulated in a dialogue that recognizes the multi-dimensional landscape. Further, the involvement of local residents can extend beyond merely administering questionnaires and surveys to the acquisition of marketable skills that will enhance local involvement in the land management process. By establishing a process of ownership, local knowledge can be controlled in accordance with community norms and desires, thereby empowering and mobilizing local initiatives in order to further their own self-defined development.

To have local land use knowledge shared only to collect dust on a shelf, to be incorporated into a Geographical Information System with no local means of access, or to have the project abandoned when researchers leave the community, not only misrepresents the aboriginal landscape but is in the end a disservice to the holders of that knowledge. If land use research is to safeguard the cultural landscape of aboriginal peoples, future research initiatives must be seen more as a vehicle for involvement and empowerment than as a salvaging of cultural artifacts. By failing to promote capacity building mechanisms at the community level, land use research may actually hasten the extinguishment policies aboriginal peoples have long resisted, thereby leaving the traditional territories of aboriginal peoples as the isolated sites they are often depicted as.

Summary

This chapter has presented the methodological framework utilized throughout this analysis. Relying extensively on local and regional participatory methods, this research has included traveling and mapping the cultural and industrial landscape of the WFLFN, involvement with the Kee Tas Kee Now Trappers Association, and participation in the Whitefish Lake Co-operative Management Working Groups and Implementation and Steering Committees. This direct involvement has allowed for a first hand understanding of the multidimensional conflict that exists between local and industrial land use. Further, this participatory approach has provided greater insight into the adaptive strategies employed by Whitefish Lake to redefine the social systems that most directly influence their involvement with traditionally used land and resources.

The following chapter specifically addresses those redefining efforts through the formation and implementation of the Whitefish Lake Co-operative Management Agreement. This chapter presents the evolution of management specific to the Whitefish Lake territory as well as the institutional framework, terms of reference, and operational objectives of the Whitefish Lake Agreement.

6. The Whitefish Lake Co-Operative Management Agreement

Introduction

It is one thing to articulate the concept of co-management institutions in the abstract, it is another to provide an accurate account of the character and operational framework of a specific institution under real-world conditions (Young 1982: 45). This chapter moves beyond the abstract, to the 'real world' formation of the Whitefish Lake Cooperative Management Agreement.

Beginning with the local-management system of the Whitefish Lake Cree, this chapter discusses the evolution of land and resource management specific to the Whitefish Lake territory. This section is followed by the emergence of the provincial management system, represented currently by two, at times goal conflicting, institutions - Alberta Lands and Forests and the Alberta Department of Fish and Wildlife, Natural Resources Division. This chapter then presents the events leading to the configuration of the Whitefish Lake Cooperative Management Agreement, including the institutional structure of the Agreement, the negotiated terms of reference, and a preliminary list of discussion items to be addressed in its implementation.

6.1 Systems of Local-Management

The traditional territory of the WFLFN can be characterized as a region marked by cyclical and non-cyclical fluctuations in almost every significant wildlife resource. Often the variations that occur are on a strictly local basis, affecting a specific resource in a specific area; but in other cases variations may affect an entire region. For instance, snowshoe hares may reach a cyclical low, creating a natural shortage; but according to Whitefish Lake residents, localized shortages are far more prevalent, such as an occasional winter fish kill of Utikuma Lake (resulting in the failure of the whitefish run), or the movement of moose in or out of a certain area because of ecosystemic change (i.e., wildfire or flooding caused by beaver dams). Further, resources such as waterfowl are subject to changes in their seasonal availability resulting from prevailing weather conditions or migratory patterns. In addition to cyclical variations, resources in this region are generally concentrated in specific areas and tend to be scattered rather than distributed evenly. Owing to the ecological characteristics of the boreal forest region, Whitefish Lake residents can be characterized as people constantly coping with uncertainties relating to problems of resource scarcity and availability.

Because of the variability and localization of resources, the land use patterns, stewardship practices and subsistence strategies of community residents are continually being adapted and reordered to reflect the ever-changing sub-arctic environment. By continually seeking and assessing environmental information, residents are well aware of environmental trends (i.e., floral and faunal distributions) as well as other factors that can be incorporated into their decision making processes (i.e., spatial and temporal changes in the landscape). By moving throughout the landscape, local residents continually build upon an intimate understanding of their local environment, thereby adding to an already complex awareness of their traveled landscape. This environmental knowledge has enabled the Cree of Whitefish Lake to actively manage and manipulate key resources that remain central to their economic, cultural and spiritual security.

Lewis (1982: 46) has argued that the Cree's use of prescribed fire technology in the shaping of selected environments is as much a strategy of resource management as are systems of agricultural production. By creating a mosaic of habitats, the Cree are able to plan for and manipulate environmental conditions that prove favorable to their own survival. Fire, as a means of exercising stewardship, has been used by the Cree to enhance berry production, ease travel conditions, improve nesting and feeding areas of waterfowl, stimulate the growth of forage to attract herbivores and, in turn, fur bearing predators, and to create favored micro-habitats for grazing ungulates. According to Lewis (1982: 49), the overall aim in using prescribed burning and the actual ways that fires were planned, carried out, and controlled are inseparable in the same way that any technology necessarily involves a relationship of means and ends in a coherent system of perceived causes and effects.

Feit (1986: 52) has made similar observations of the Mistassini Cree, who have long recognized that certain species respond to methods of stewardship. For example, moose and beaver directly respond to the fallowing or rotating of hunting/trapping territories, while the variations in the hare and grouse populations fail to respond to management strategies (Feit 1986). Whitefish Lake hunters and trappers are also aware that they can easily over exploit certain game populations unless self-imposed restrictions and conservation practices are applied. This has been the case with local moose populations, where this highly valued resource is carefully managed to help ensure its sustainability (for instance, the selected harvest of adult bull moose over available cows and the alternating of hunting areas). This internalized management responsibility has been approached through the decentralization of decision-making and the inclusion of community participation. As Nelson (1982: 222) has similarly noted of the Alaskan Koyukon, this intentional manipulation of harvest levels is based upon an empirical understanding of population dynamics and on ethically based restraint of excessive exploitation.

It is important to understand that at the core of these management strategies lies a basic tenet that extends subsistence beyond merely economic pursuits, to a system manifestly bound to religious ideology and ritual practice (Nelson 1983b).[51] Thus the underlying principle in Whitefish Lake ideology is the adherence to a moral system which governs human behavior toward the environment. The legitimacy and authority of such behaviors are determined at the community level by reference to the locally evolved knowledge base and practices that bind Whitefish Lake residents through shared norms and values. The moral conception of the Whitefish Lake landscape is therefore articulated through adherence to rules and codes of conduct that remain grounded in Cree ideology.[52] According to Nelson (1983b: 226):

> "... the environment is like a second society in which people live, governed by elaborate rules of behavior and etiquette, capable of rewarding those who follow these rules and punishing those who do not."

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[51] Tanner (1979) has made similar observations of the Mistassini Cree. However, I find Nelson's (1983b) depiction of the Koyukon worldview to be more consistent with the way in which the Cree of Whitefish Lake interact with the landscape.

[52] This moral conception of the landscape is not unique to the Cree. As Redfield (1957: 106) has noted, "The universe is morally significant. It cares. What man sees out there, that which is not himself and yet in which he somehow participates is a drama of conduct.... The universe is spun of duty and ethical judgment.... The universe is not an indifferent system. It is a system of moral consequence.

For the Cree of Whitefish Lake their epistemological system is based upon a shared understanding of the Earth and the universe, and the nested relationship between all their elements (Wolfe et al 1992: 15). Within this system exists a complex spiritual relationship between the human and the natural world that emphasizes a social, physical, and spiritual interrelationship. This relationship is of reciprocal approbation in which the Cree invest themselves into the landscape, and at the same time incorporate the landscape into their own most fundamental experiences (Wolfe et al 1992: 15). It is this perception of the multi-dimensional landscape that dictates Cree behavior towards the environment.

6.2 Systems of Provincial Management

The mere survival of the WFLFN seems ample testimony to the development of a localized knowledge system and the application of management practices that have evolved from that system of knowing. However, because the Cree system of stewardship is seldom codified, much less textualized into laws and regulations, provincial managers often conclude that the Cree have no system of self-regulation or practices of conservation to guide behavior (Osherenko 1988: 93). It has been the prevailing attitude among provincial managers that in the absence of external controls, people are incapable of self-regulation and acting for a common good, thus illustrating Hardin's parable of tragedy.

The provincial system of management arose from the perceived need to protect wildlife as well as the need to allocate wildlife resources among competing interests. This attitude was clearly expressed during the original Treaty Eight (1899) negotiations by the Commissioners in charge, who stated:

> ... only such laws as to hunting and fishing as were in the interest of the Indians and were found necessary *in order to protect the fish and the furbearing animals* would be made, and that they [the Indians] would be as free to hunt and fish after the treaty as they would be if they never entered into it (emphasis added).[53]

A century later provincial managers continue to subscribe to the same paradigm of resource management; that is, the utilitarian worldview that humans hold dominion over nature. Contrary to the Cree system of knowing, the provincial system adheres to a paradigm according to which the world is arranged into lower and higher forms. This legacy is based upon three overriding assumptions: 1) that understanding of a whole and complex phenomenon can be achieved in terms of more elemental events; 2) that the observer must deliberately separate him or herself from that being observed and to learn about it through various replicable probes; and 3) that what is measurable is scientifically real, and what is scientifically real is measurable (Wolfe et al 1992: 11). This reductionist approach simply sees the environment in atomistic terms, discrete and unrelated.

This perspective stands in direct opposition to indigenous knowledge formation. Whereas the western approach is based upon objective and positivistic deduction, Whitefish Lake residents rely on a holistic and subjective understanding of the world, built upon generations of trial-and-error experiences. By subscribing to an analytical mode of understanding, provincial resource managers have been constrained in their ability to recognize alternative systems of knowing and the application of that knowledge in methods of resource management. As a result, they have been limited in their ability to legitimize alternative systems and have generally discounted them as anecdotal and nonquantifiable. In cases where local knowledge has been recognized by provincial managers as being 'legitimate', agency representatives often apply their own typologies to what it thinks the Cree system is, ultimately invalidating the local contribution. Owing to these barriers, Whitefish Lake resource users have continually encountered difficulty in communicating their understanding of events to provincial resource managers.

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[53] HBCA D.20 / 69, Round to C.C. Chipman, 2 October 1899.

In further contrast to the decentralized decision-making process of the Cree, provincial management is best described as a complex decision-making bureaucracy involving resource inventories, wildlife assessments, management programs, policy initiatives and administrative legislation with the primary intent to control and govern human action. Within the provincial system, managers remain distinct from local resource users. It is a centralized system of management, flowing from the top down, with separate agencies designated to manage individual categories of the environment (i.e., fisheries, wildlife and forests).

Within the territory of the WFLFN two provincial agencies have been charged with the responsibility of administering crown lands and resources: Alberta Lands and Forests Division and the Alberta Department of Fish and Wildlife, Natural Resources Division. While the stated goals of each institution mirror the other, that is, managing for ecological sustainability while considering the needs and rights of resource users, their actions are at times quite conflicting.

With an emphasis being placed on resource development, provincial policy has, to a large extent, placed greater weight on non-wildlife resources (i.e., timber and oil/gas) than on wildlife populations (Feit 1988a). By managing for sustainable yields, it can be argued that the role of Alberta Lands and Forests is geared more towards exploitive development than for managing for multiple (sustainable) resource use. As a result, the Alberta Fish and Wildlife Division is often forced to deal with an environment strained by the effects of resource exploitation. Thus the Department of Fish and Wildlife is often forced to compromise its institutional goals of wildlife enhancement to the superceding (economic) interests of the province, promoted through the management practices of Alberta Lands and Forests. However, by compromising its institutional goals it is the local resource users who bear the cost of these compromises through continued industrial exploitation and environmental degradation. As Feit (1988a: 75) has noted:

> State management tends to emphasis national or provincial interests over local interests, because of the structure of legislative power by which state management is established....State management therefore tends to generate conflicts with local conservation interests, because it is at the local level that the major costs of these compromises are generally felt.

6.3 Co-operative Management

Recognizing the limitations of the provincial management systems, as well as the strain being placed on local lands and resources resulting from that system, the WFLFN has long pursued a greater role in the management of their traditional lands.[54] Despite their efforts, gaining any measure of influence over off-reserve lands and resource had been met with considerable resistance and little success. However, in 1985 opportunity finally presented itself. At this time it was recognized that when the Whitefish Lake reserve was established (1908) the Crown had failed to administer a land base to which the Whitefish Lake band had legally been entitled. Thus, in 1985 the WFLFN submitted a Treaty Land Entitlement Claim to the Government of Canada. In April of 1986, the Treaty Land Entitlement Claim was validated by the Crown, resulting in the ratification of a Memorandum of Intent in November of 1988.

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[54] This is not to say that systems of self-management can not coexist within state management systems. In fact Whitefish Lake residents continue to enact self-impose management practices that stress conservation and the sustainability of resources.

In addition to providing a supplementary land base and financial settlement,[55] Whitefish Lake was successful in negotiating a clause within the Memorandum that indicated that the province of Alberta and the WFLFN would enter into discussions regarding co-operative approaches to land, wildlife, and fisheries management in the area surrounding the Whitefish Lake reserve (2,700 sq. km.). Through these negotiations, WFLFN was successful in establishing the only First Nation - Province of Alberta Co-operative Management Agreement to date, as recognized under the terms of a treaty land entitlement claim (1994). This agreement is in the form of a Memorandum of Understanding (MOU) signed between Alberta Environmental Protection, Alberta aboriginal Affairs, and the WFLFN.[56]

6.4 Implementation of the MOU

The vehicle used to fulfill the objective of the MOU is the Implementation Plan for the Cooperative Agreement (see below). Developed cooperatively by the WFLFN and the province of Alberta, this plan represents the framework for discussion between the WFLFN and province leading towards the cooperative management of lands and resources. Following four years of negotiations and political maneuvering, terms of reference and objectives for the Whitefish Lake Co-operative Management Agreement were finalized and implementation went into operation in January of 1998 (see below).

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[55] The Treaty Land Entitlement Claim of the WFLFN consisted of an additional 5,830 acres of land and $19,166,000. The Government of Alberta provided the land and $10,833,000 and the Government of Canada contributed $8,333,000.

[56] see Appendix B: Memorandum of Understanding

Implementation Plan of the Co-operative Agreement
Memorandum of Understanding

Between

The Whitefish Lake First Nation
and
The Government of the Province of Alberta

Guiding Principles:

Whereas the Whitefish Lake First Nation (WFLFN) and the Government of Alberta, jointly referred to as "the parties", signed documents entitled Memorandum of Agreement (MOA) and a Memorandum of Understanding (MOU), December 12, 1994;

and Whereas the WFLFN and Province of Alberta Steering Committee was established to undertake consultation regarding the objectives of the MOU;

and Whereas the objectives of the MOU provide for the development of a process of mutual cooperation and consultation on natural resource matters in Forest Management Unit (FMU) S-9 in order to attempt to resolve issues of concern;

and Whereas the parties will pursue participation of other parties as required in implementing action plans pursuant to the MOU;

and Whereas the principles of resource management within the F.M.U. S-9 are based on sustained development, integrated resource management, care, respect and protection of the environment, in consideration of biodiversity;

and Whereas increased participation of Whitefish Lake residents in employment opportunities, and resource and land use planning is desirable;

and Whereas Whitefish Lake First Nation has primary responsibility for the maintenance of community values and traditions and the well-being of Whitefish Lake people;

and Whereas the Parties agree that traditional ecological knowledge, scientific knowledge, and economic factors are important considerations in the management of resources;

and Whereas the MOU Steering Committee is responsible for recommending process to resolve issues, including development of recommendations for policy interpretations or changes in policy that may be required to achieve the objectives of the MOU;

and Whereas Natural Resources Service and Land and Forest Services together with the Whitefish Lake First Nation will work cooperatively on fish, wildlife and timber management;

and Whereas the parties acknowledge the Implementation Plan as a vehicle to achieve the principles of the MOU;

and Whereas this process is consistent with the statement made by the Honorable Ty Lund, Minister of Environmental Protection, in the attached speech on December 12, 1994;

NOW THEREFORE the Parties Agree to the Following Actions:

Committee Structure

1.0 The Parties will establish a regional management structure for successful implementation of the MOU, to be known as the Implementation Committee. The Terms of Reference for this committee are enclosed in Attachment #1.

Areas of Mutual Interest

2.0 Traditional and current land use and occupancy studies and inventories will be undertaken by WFLFN after acquiring and assessing existing information from Alberta Environmental Protection and other sources. The WFLFN will identify specific sites that have a cultural, spiritual, or historic significance. These sites will be considered for the placement of a protective notation under the Land Status Automated System.

Research and Inventory Projects

(May include the following studies)

- inventories and mapping of all forest values (including non-market forest values);
- old village and burial sites, spiritual places and ceremonial grounds;
- archaeological values;
- riparian areas;
- buffer zone requirements;
- fish and wildlife;
- habitat protection and reclamation;
- migratory birds and waterfowl;
- furbearers;
- traplines;
- traditional trails and current trails;

- vegetation (including rare and endangered plants, medicinal plants, sacred plants);
- recreation;
- traditional harvesting sites;
- non-renewable natural resources such as minerals, oil, gas; and
- treatments carried out on forest land, such as harvesting and renewing trees.

2.1 WFLFN will conduct research on the development of community education, including seminars on the meaning of sustainable development, the definition of biodiversity and on harvesting processes. These are to be geared to different age cohorts and sectors.

2.2 WFLFN will research, design, and implement a process for community awareness and education pertaining to the contents and structure of the Whitefish Lake Harvesting Plan, including the principles and practices contained in the Alberta Timber Operating Ground Rules.

2.3 WFLFN will implement a process for improved communication between Whitefish Lake Logging, forest industries, Whitefish Lake trappers, and Settlement trappers regarding consultation prior to harvesting on traplines.

2.4 Whitefish Lake will review the issue of buffer zones and road allowances with elders, hunters and trappers. These discussions, to shape the final forest management plan, will include buffer zone width in riparian areas and possible variances at certain locations.

2.5 Whitefish Lake will conduct research regarding non-market values of forests and value differences between men and women who use the forest.

Economic Opportunities

3.0 The Parties agree to identify economic opportunities in the Natural Resources sector and to promote greater interest among members of WFLFN. This may lead to new contractual or joint venture arrangements with the private sector.

3.1 The Implementation Committee will implement the process with Whitefish Lake to establish core groups of trained individuals for employment in silviculture and fire fighting opportunities.

Commercial Fishing
(refer to section 2iii of the MOU)

4.0 The Implementation Committee will continue to pursue commercial fishing opportunities and will provide options and suggestions to the Steering Committee.

Education and Training

5.0 The WFLFN will take the lead role in developing a comprehensive plan outlining the education and training requirements of Whitefish Lake residents in the area of resource management. Environmental Protection will identify the technical and educational requirements for resource management positions within the department. This ongoing, cooperative process will identify: sources of training and education programs; existing structures and opportunities; and establish an inventory of human resources available at the community level. A preliminary plan of education and training requirements will be completed within six months of the approval of the overall Implementation Plan.

Communication Strategy

6.0 The Parties agree to establish a comprehensive communication strategy which will be approved by the Implementation Committee.

6.1 The purpose of this communication strategy will be three-fold: to promote an awareness of the MOU; to encourage the development of formal and informal lines of communication among various parties in order to help match the skills, services and capabilities of the WFLFN with potential economic development opportunities; and, to coordinate the distribution of written materials from various sources which are relevant to the objectives and activities under the MOU.

6.2 Whitefish lake representatives will take primary responsibility for informing Whitefish Lake members. Government representatives will take primary responsibility for informing other departments. The Steering Committee shall take joint responsibility for informing other institutions such as the Canadian Association of Petroleum Producers (CAPP) and businesses operating in the S-9 management area.

6.3 Best efforts will be made to provide material in both Cree and English.

Attachment #1

Whitefish Lake Cooperative Management Implementation Committee

TERMS OF REFERENCE

Pursuant to the Memorandum of Understanding (MOU) on Cooperative Management signed by the Whitefish Lake First Nation (WFLFN) and the Government of Alberta (jointly referred to as the "parties") on December 12, 1994, and the Cooperative Management Implementation Plan dated November 21, 1997, an Implementation Committee is hereby established.

The purpose of the Implementation Committee will be to undertake a process of meaningful consultation and cooperation on renewable resource and environmental matters of mutual interest within the Forest Management Unit (FMU) S-9, and to put into effect the Implementation Plan dated November 21, 1997.

The Implementation Committee will report to the Steering Committee referenced in the above noted MOU. The membership of the Implementation Committee will consist of up to three representatives from the WFLFN and up to three senior regional representatives from the department of Environmental Protection, as well as designated alternates. With the mutual consent of the "parties", appropriate support staff and other government and non-government representatives may attend and participate in some or all of the Implementation Committee meetings.

The Implementation Committee shall establish its own work plans, working procedures and operating guidelines. The committee may establish working groups, with their own Terms of Reference[57], to address specific or technical matters. A preliminary chart displaying this operational structure is attached. Each of the parties will be responsible for their own costs relating to any aspect of the operations of the Implementation Committee or the working groups.

The Implementation Committee shall prepare an annual summary of its activities for review and approval by the Steering Committee. The first summary of activities will cover the period December, 1994 to December, 1997, to reflect the activities that have occurred since the MOU was signed. Subsequent annual summaries will be prepared at the end of each calendar year.

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[57] see Appendix C: Working Groups Terms of Reference.

The parties have drafted the attached Preliminary List of Discussion Items which reflects the current priority areas that the Implementation Committee will focus on. This list will be reviewed and approved by the Steering Committee and may be revised or amended in the future as circumstances warrant, with the approval of the Steering Committee.

6.5 Objectives of the Implementation Plan

To enhance the involvement of the WFLFN in the management of the S-9 F.M.U. specific measures have been included in the Implementation Plan. These measures include community economic development initiatives, education and training programs for Whitefish Lake residents, and the implementation of a cooperative management regime for local lands and resources.

6.5.1 Economic Development

Throughout the development of the cooperative management agreement, one of the primary objectives of the WFLFN was to enhance economic opportunities for local residents. Economic development includes growth in local employment opportunities, increased business ventures and contracts, and the training of Whitefish Lake residents in fields both in and out of natural resource management.

While the goal of cooperative management may seem distantly related to the advancement of community economic development, their relationships are inseperatably linked. Although Whitefish Lake has become increasingly submerged into the industrialized (formal) economy since the turn of the century, this involvement has not replaced the 'informal' economic relations (i.e., non-monetary exchange and production of subsistence resources) that continue to exist among Whitefish Lake residents.[58] In fact, these two economic sectors continue to work in tandem, each promoting the existence of the other.[59] As Hedican (1995:122) has noted:

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[58] In referring to the informal economic relations of the Whitefish Lake residents I remind the reader of how subsistence has been defined by local residents, presented in Chapter Two, which include the cultural values that are socially integrated into land-based activities.

> ... rather than regarding these two sectors as mutually exclusive, it is altogether possible that each economic area can make a positive contribution to the other, such that subsistence production is enhanced by wage-work opportunities, and alternatively that a healthy subsistence sector can create additional opportunities for cash earning.

One may naturally expect that with entrance into the wage earning economy the utilization of subsistence resources would decline. However, research has shown (e.g., Usher 1976; Wolfe and Walker 1987; Tobias 1993; Berkes et al 1994), that the higher the per capita income in rural aboriginal communities, the greater the amount of subsistence resources produced. Thus the primary producers of subsistence resources in the Whitefish Lake community tend to be households with the highest income who have the means to purchase the equipment necessary (i.e., ATVs, snowmobiles, fuel) for effective harvesting. Correspondingly, the households with the lowest income usually produce the least amount of subsistence foods.

Therefore the idea of a mixed economy, one which is represented by both cash and subsistence sectors with a continued seasonal round of harvesting activities, is one to which Whitefish Lake residents are strongly committed. However, reliable wage earning opportunities have proven scarce for Whitefish Lake residents, making their involvement in subsistence activities increasingly challenging. As a result, Whitefish Lake has stressed economic development opportunities throughout the cooperative management negotiations, not to replace the subsistence sector but rather to enhance it for the future.

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[59] For further review of mixed subsistence-wage economies see: Nelson 1973, 1977; Usher 1976; Brody 1981; Freeman 1986; Wolfe and Walker 1987; Elias 1991; Wolfe et al 1992; Hrenchuk 1993; Kofinas 1993; Tobias 1993; Berkes et al 1994; Notzke 1994; Hedican 1995.

6.5.2 Education and Training

Education and training opportunities for Whitefish Lake residents are seen as two of the primary requisites to successful land and resource management. To facilitate the participation of Whitefish Lake residents in management planning and land use decision making, education and training opportunities will be made available to interested community members. Further, it is considered vital that residents who already have the skills and training needed for successful cooperative management continue to receive additional training and education while those who are interested in becoming more involved in the cooperative management process have access to the same capacity building sources. By cooperatively identifying sources of training (including funding opportunities), it is believed that community residents can begin successfully to integrate western management practices with their own traditional/local knowledge system.

6.5.3 A Regime for Cooperative Land and Resource Management

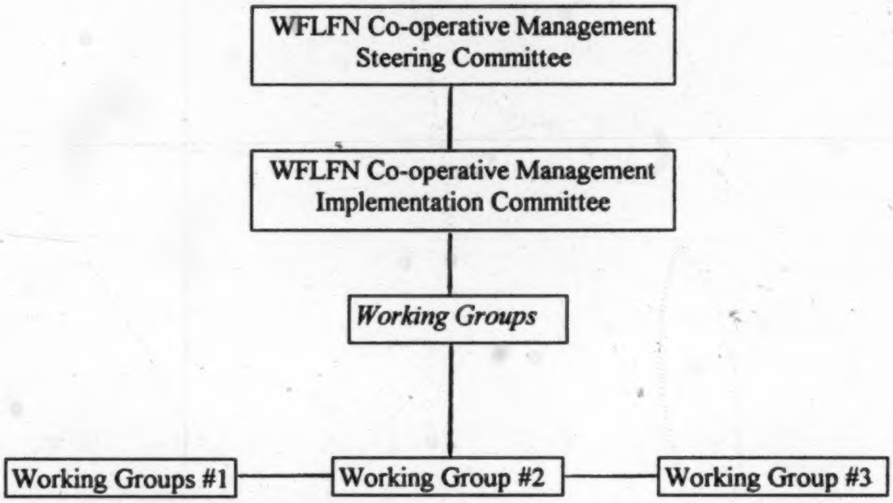
The cooperative management of lands and resources will be approached by establishing an institution of cooperation and consultation on matters concerning the management of local lands and resources. The cooperative management body shall be responsible for identifying key resource management issues and areas of concern, establishing a process to address these key issues, and for recommending processes to resolve issues. These may include the development of recommendations for policy interpretations and changes in policy that may be required to achieve agreed upon objectives. Further, this cooperative management institution will be responsible for long range management planning of fish, wildlife, and timber resources and to mutually arrive at future management plans.

The organizational structure of the Agreement consists of a Steering Committee, represented by the Whitefish Lake Chief and Council representative and the Assistant Deputy Ministers of Aboriginal Affairs and Alberta Environmental Protection. The Steering Committee meets on an annual basis to review progress and to set priorities for the coming year. Reporting to the Steering Committee is the Implementation Committee consisting of two Councilors from the WFLFN and two senior regional representatives from the Department of Environmental Protection, as well as designated alternates. This committee meets on a quarterly basis to establish work plans, working procedures, operating guidelines and to address specific technical matters. Through mutual consent, it is agreed that appropriate support staff, community residents and other government and non-governmental representatives may attend and participate in the Implementation Committee meetings.

At the local level individual working groups have been established to address issues of immediate concern. These groups meet on a monthly basis to review and discuss any and all issues pertaining to the co-operative management area. These meetings are approached as a forum to discuss matters of interest to all stakeholders. It is believed that the success of the Working Groups will lie in their flexibility and adaptability to meet as issues arise outside of the pre-scheduled Working Group meetings.

If resolution on specific matters cannot be resolved at the Working Group level it has been agreed that the matter will be referred to the regional Implementation Committee for review. Further, no actions will be taken at the local level until the matter has been resolved by the Implementation Committee or deferred to the Steering Committee. Through the involvement of the WFLFN, it is hoped that issues of mutual concern can be resolved in a manner that takes into account the economic, social and cultural values of the Whitefish Lake residents.

Whitefish Lake First Nation
Cooperative Management Agreement
Operational Structure
(Fig. 9)


WFLFN Co-operative Management Steering Committee
WFLFN Co-operative Management Implementation Committee
Working Groups
Working Groups #1
Working Group #2
Working Group #3

6.6 Preliminary List of Discussion Items

A preliminary list of discussion items has been developed and will be addressed by the Implementation Committee and local Working Groups. This list represents initial areas of concern that arose during the negotiations/development of the Implementation Plan. This does not represent a complete coverage of local concerns but rather specific areas that were felt to be most significant to the cooperative management process. They are as follows:

6.6.1 Reclamation of Industrial Activity

Over the past three decades, industrial land disturbance activities such as exploration, pipeline construction, road access, seismic work and sand and gravel extraction have resulted in ecologically unbalanced and aesthetically unappealing areas in the Whitefish Lake territory. Under the 1973 *Land Surface Conservation and Reclamation Act,*[60] these areas are to be returned to a condition which will allow for 'productive' use. However, because of provincial regulatory limitations (i.e., limited funds and man-power to enforce provincial regulations) these abandoned industrial areas are often left unreclaimed, leaving the landscape scarred by past industrial activities.

Through the cooperative management agreement, Whitefish Lake is establishing a process that will facilitate local involvement in the reclamation of these industrial areas. By working directly with the Alberta Forest Service, Alberta Lands and Forests and industry, Whitefish Lake plans to ensure that disturbed areas located within their traditional territory are reclaimed in a manner that incorporates the interests of the WFLFN, be it wildlife habitat recovery, watershed benefits or recreational opportunities.

As no two disturbance areas are the same, government, industry and the WFLFN will work cooperatively on a site-by-site basis to determine the most appropriate reclamation approach. This involvement will also allow Whitefish Lake to be involved in the actual reclaiming process, thereby providing an economic benefit to local contractors while facilitating a transfer of skills that can be applied to other reclamation projects outside the Whitefish Lake territory.

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[60] The provincial Land Surface Conservation and Reclamation Act was enacted in 1973. The act is now being revised and will be integrated into the Alberta Environmental Protection and Enhancement Act.

6.6.2 Integrating TEK and Wildlife Research

Failure to incorporate TEK into provincial management decisions stems from a number of cross-cultural barriers. Foremost among these barriers is the belief among government resource managers that TEK is ill-suited to meet the demands of contemporary environmental management. However, provincial managers who are involved in the cooperative management process have begun to recognize the value of local knowledge (temporal/spatial) in the development and conducting of wildlife research.

This cooperative approach to research is currently being demonstrated by the Alberta Fish and Wildlife Service and Whitefish Lake regarding the location and preservation of 'mineral licks' located throughout the management area.[61] Of concern to both parties is the preservation and protection of these valued habitat areas. Through efforts facilitated by the Cooperative Management Agreement, provincial managers are working with Whitefish Lake hunters and trappers to locate and safeguard these critical habitat areas from unknowing development projects.

To enhance local involvement, Whitefish Lake plans to be actively involved in all wildlife research to be conducted within the management area. This will be achieved by cooperatively designing and conducting research that is considered to be of importance to both the Whitefish Lake community and provincial agencies (i.e., land use research, wildlife/habitat research and environmental/community health studies).[62] This includes conducting, monitoring, and reviewing research results, thereby ensuring that community concerns and observations are recognized by provincial managers and incorporated into the research process. Whitefish Lake residents, and specifically the elders, can provide valuable information (both spatial and temporal) regarding the landscape that must be considered before any land management plans can be developed. Through the Co-operative Management Agreement it is hoped that future research that is of mutual concern to each party can be undertaken in a co-operative manner, thus achieving greater accuracy in results while strengthening the co-operative management relationship.

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[61] Mineral licks are natural spring areas with high concentrations of sodium which attract moose and other ungulates.

6.6.3 Trappers Compensation Issues

The Alberta Trappers Compensation Program currently allows for a 10 day notice period to inform trappers of industrial (oil/gas) activity occurring within their registered fur management/trapping areas. This notification is to provide a written description of the location of the proposed activity as to allow the trapper to decide if any personal assets are at risk.

This approach, however, has been found to be unacceptable by the WFLFN. First, mail delivery to Whitefish Lake occurs bi-weekly and is delivered to the Whitefish Lake band office. Even if local trappers check for mail on a weekly basis this process often allows for only a matter of days to retrieve valued assets from traplines or to respond to the company planning the activity, which in turn presents additional challenges to local trappers. Because a number of Whitefish Lake trappers speak (let alone read) English as a second language, making a formal response to an Edmonton or Calgary based company becomes quite difficult. As a result Whitefish Lake is working, through the Cooperative Management Agreement, to establish a more appropriate notification process between industry, government and the WFLFN.

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[62] This has been demonstrated by integrating components of the WFL land use and occupancy study into the 1999 Timber Management Plan for the S-9 Forest Management Unit developed cooperatively between the WFLFN, Alberta Lands and Forests, Tolko Forest Product and Zeidler Forest Industries.

Under development is a process of consultation that is designed foremost to protect the interests of Whitefish Lake trappers and the WFLFN while recognizing the rights of resource developers operating in the area. It is being proposed (Kee Tas Kee Now Tribal Council 1998) that any company considering initiating industrial activity within the Whitefish Lake territory, which may affect the treaty and aboriginal rights of its members/trappers, send a letter, accompanied by a project map (1:100,000 and 1:50,000) detailing the project scope, project timelines, and naming of a contact person prior to the commencement of any development, exploration, or logging activity. In addition to contacting individual trappers, a copy of this documentation should be sent directly to band administrators of the Whitefish Lake Cooperative Management Agreement. This is to ensure that any environmental concerns and/or trapper's comments can be documented and communicated back to the operator prior to the occurrence of any development. An acknowledgment of receipt by the WFLFN to the company will then be forwarded following the confirmed notification and acknowledgment by the individual trapper. The more lead time provided by the company regarding the activities, the more timely a response can be expected from the WFLFN (Kee Tas Kee Now Tribal Council 1998).

6.6.4 Provincial Permit System for Right-of-Way Access

The provincial permit system for property damage represents one of the most contested industrial practices occurring within the management area. Administered by the District Fish and Wildlife officer, permits for property damage are provided to oil/gas companies and logging operators if, in industry's opinion, access roads or other industrial areas may be damaged from the flooding effects of beaver dams. Through a five day notification period the registered trapper of that area is offered the opportunity to harvest the 'nuisance' beaver. However, as addressed in the trappers' compensation issue, there are significant demographic and cross-cultural limitations in the current notification process.

As the current permit system for property damage clearly illustrates, the interest of industrial developers has traditionally taken precedence over the interests of local trappers who may have been managing a beaver population for generations or have used a beaver colony to create a habitat favorable to preferred furbearers such as mink and fisher. Whitefish Lake trappers maintain an intimate understanding of the furbearer population distributed throughout their trapping territory. For this reason local trappers have become increasingly frustrated with the provincial permit system providing industry the right to destroy dams that, in their view, are nuisances. The differing perceptions regarding the importance and significance of beaver dams, and for that matter land use in general, represents one of the central issues to be addressed in the cooperative management process.

6.6.5 Environmental Health Research

There is a growing concern among the Whitefish Lake residents regarding the impact of industrial effects on the health of local wildlife and community residents (e.g., industrial residues, roadside/right-of-way herbicide spraying). In response, environmental health research will be conducted to identify specific areas of concern, including the perceived contamination of country foods, the identification of specific contaminants and the resulting effects on environmental health (human/non-human), and the documentation of local perceptions regarding the functioning ecosystem in relation to temporal and spatial change. Through the co-operative management process a vehicle for dialogue has been established that enables the concerns of community residents to be expressed in a forum which can facilitate co-operative research leading to change.

6.6.6 Co-operative Land Use Research

One of the primary objectives of the Whitefish Lake community was the documentation and preservation of cultural sites that are known to exist throughout the management area. In cooperation with Alberta Community Development (Cultural Facilities and Historic Resources Division) and Alberta Lands and Forests, the cultural values of the WFLFN, which include grave sites, historic sites and archaeological sites are being recorded and placed under Protective Notations through the Historical Resources Act, thereby ensuring the preservation and protection of these areas from future development. To date a total of 40 individual burial sites have been documented and registered that were previously at risk from unknowing development. In most cases these sites are places that individuals or families had once occupied. While some of the graves have visible markings, such as headstones, wooden crosses, or fenced areas, many of these areas are marked only in the memories of Whitefish Lake elders, making the documentation and protection of these sites even more important.

Local knowledge regarding fish and wildlife habitat is also being used to safeguard specific locales. By working with the Alberta Department of Fish and Wildlife, areas such as medicinal plant locations, berry locations, mineral licks, waterfowl nesting and staging areas, and other critical wildlife areas have been recorded and are being placed under Protective or Consultative Notations, again serving to safeguard these areas from future development. When development plans are slated for these areas Whitefish Lake representatives, industry representatives and government personnel review the plans, make recommendations and then decide how best to proceed in a cooperative manner.

To help enhance their role in the management process, Whitefish Lake is developing and rendering operational a digital, automated land management system (GIS) to demonstrate their capabilities of incorporating industrial land management data with their own traditional land and resource knowledge. Through the completed land use research, WFLFN is developing the capacity to convert traditional land values digitally into a GIS computer based system which can visually display, edit and analyze the geographically referenced material. This system will enable the WFLFN to incorporate industrial land management plans with the traditional land and resource component of the project, allowing the WFLFN to identify and then promote, preserve and protect their traditional values and knowledge. This will allow the WFLFN to identify both market and non-market forest values before any activity occurs in the area. In addition to protecting traditional land values, it will further allow the WFLFN to participate in land management and resource development planning with government and industry partners.

An additional objective of Whitefish Lake was the recording of community held 'place-names' or toponyms for the local landscape (accomplished through the Land Use and Occupancy Study). Seen as being integral to sound co-operative management, Whitefish Lake has recognized the importance of establishing common terms of reference for physical features of the landscape.

The recording of named-places or toponyms, together with their spatial and epistemological correlates, have long been the subject of anthropological inquiry, but the recording and use of local place-names has received no regard from government/industry land managers operating within the traditional territory of the Whitefish Lake Cree. In addition, the provincial maps generally used by industry and government planners refer to landscape feature by names that have no relevance to local residents and are sometimes represented by only a number and a legal description of its location (i.e., NW 1/4-1/4 of section 19: 7-Twp.83, R.13-W.of the 5th). Because of the significance of 'place' to Whitefish Lake residence, the establishment of common toponyms is an attempt to illustrate the relationship local residents have with the surrounding landscape. The recognition of this relationship by industry and government land managers is believed to be vital to successful co-operative land management.

6.6.7 Economic Development Opportunities

As noted above, one of the primary objectives of the Cooperative Management Agreement is the enhancement of economic opportunities for Whitefish Lake residents.

This issue has been and will continue to be cooperatively addressed by the Implementation Committee. Specifically, the Committee is exploring opportunities for local residents to become more fully involved in: wildlands fire training (heli-attack crews); entrance into the Utikuma Lake commercial fishery;[63] silvi-culture and agro-forestry opportunities; eco-tourism (specifically bird watching and camping along Utikuma Lake); and guiding and outfitting opportunities for sport hunters and fishers.

6.7 Co-Management at the Community Level

Successful co-management initiatives have proven to demand significant commitments from First Nation communities. In a number of cases communities embarking on co-operative management agreements with either government or industry partners have lacked the resources (human and financial) to assume an equitable role in the management process. This, however, is not the case with the Whitefish Lake Co-operative Management Agreement. Whitefish Lake, with both the capacity and the financial resources, has the means and motive to assume an active role in the management of their traditionally used lands. However, for effective cooperative management to become a reality, Whitefish Lake has recognized that a number of community-based protocols and procedures need to be established so as to create guidelines for government/industry involvement with the Whitefish Lake community. With increased managerial involvement of the S-9 F.M.U., Whitefish Lake has taken steps to strengthen existing local structures and is establishing new structures and procedures to assume managerial responsibility effectively.

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[63] Currently the Utikuma Lake commercial fishery quota is distributed between Gift Lake Settlement residents and non-Aboriginal commercial fishers.

One of the first objectives of the WFLFN has been the establishment of locally defined systems for addressing proposed development in the S-9 area. That is, Whitefish Lake has developed a plan for how it will operate locally within this management institution, that includes:

- establishing a set of protocols (codes of practice) for being notified and involved in development planning (i.e., Environmental Protection consultative and protective notations).
- developing community consultation guidelines involving the WFL Elders Advisory Council.
- preparing a list of key community contacts for consultation purposes.
- preparing a list of local experts/consultants covering specific regions of the management area (e.g., registered trappers).
- preparing a list of people available for employment.
- establishing education and training programs in the fields of resource management.
- establishing a position on development which takes into account the economic, social and cultural needs and values of the WFLFN.

Through these protocols Whitefish Lake intends to promote effective communication between government agencies and community residents to ensure an increased understanding of both government objectives and community interests and concerns. Therefore, community involvement is seen as an integral feature of the cooperative management process.

6.8 Management Strategies

A variety of approaches will be used to address future management issues. It has been recognized that public meetings and presentations fail to inform community members about management objectives effectively. Similarly, these forums have proven inappropriate for local residents (specifically the elders who may have the most to contribute) to express their opinions and concerns to provincial managers. Recognizing this, alternative methods (e.g., on-the-land meetings) will be used to facilitate dialogue between community members and provincial resource managers.

Committee members are also aware that concepts and terminology used by provincial managers (i.e., harvests, quotas, stocks) can impede the co-operative management process. Often the very language and concepts used by provincial managers can create barriers to equal participation in the management process. Additionally, co-management committee members must remain cognizant of the fact that community residents, as well as committee members, often speak different first languages, adding to the challenges of cooperative management. Failure to recognize these cross-cultural differences may result in frustration and may ultimately lead to a breakdown of the entire cooperative management process. Finally, recognizing that the experiences of successful (and unsuccessful) co-management agreements offer lessons to be learned, Whitefish Lake plans to take part in workshops and seminars (e.g., the Sustainable Forest Management Network) in order to share and learn from the experiences of others who are involved in similar management efforts.[64]

As the Whitefish Lake Co-operative Management Agreement develops, there will undoubtedly be a number of challenges and obstacles that will need to be addressed and overcome if a truly successful co-operative management structure is to be established. The ultimate success of the Agreement will depend on the flexibility and adaptability of the WFLFN and government representatives in meeting the challenges involved in cooperative resource management. However, the success of the Whitefish Lake Cooperative

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[64] Since 1994 the WFLFN has been involved with the Sustainable Forest Management Network at the University of Alberta in developing and exploring research initiatives that will enhance their involvement in the sustainable management of their traditionally used lands and resources.

Management Agreement will ultimately be judged on its long-term ability to adopt new strategies and alternative structures to meet the ever-changing socionatural environment. Thus, the ability/necessity to co-evolve with the natural environment will, in the end, determine its success.

Summary

> We can not ignore the fact that, as aboriginal and non-aboriginal people, we are faced with a difficult legacy arising in part from a history of classic conflicts between settlers and Indigenous peoples within our borders... To bring about a reconciliation, we need a new way of relating to one another; it must recognize the many commonalties shared by aboriginal and non-aboriginal people - but it must also recognize the differences between them (Royal Commission on aboriginal Peoples 1996).

At the most general level the cause of conflicts between the WFLFN and the province of Alberta has been that of cooperation: how to change the situation from one in which Whitefish Lake and provincial managers act independently to one in which coordinated strategies are mutually adopted to obtain joint benefits and reduce individual harm (Ostrom 1990). Because the main impediment to establishing co-operative approaches to resource management remain grounded in cultural differences and political polarization, it is fair to assume that the convergence and expectations around the Whitefish Lake Co-operative Management Agreement may be slow in coming. However, as Meredith (1983) has noted, when provincial institutions recognize the benefits of becoming less assertive about the merits of externally imposed management regimes and if what is functional in the cultural system of Whitefish Lake can be adapted to a (reordered) institutionalized management framework, then an effective middle-path for co-operative resource management may become a reality.

Conflict and co-operation over land and resource management is certainly not unique to the Whitefish Lake First Nation. The growing interest in co-management arrangement throughout the world has brought into focus the challenges of ethically resolving conflicts between indigenous peoples and states over the control of lands and resources. The following chapter offers additional examples of how aboriginal resources users are working with state institutions in an effort to arrive at a middle path of resource management.

7. Co-Management Institutions

Introduction

To gain an empirical understanding of how resource users coordinate strategies to gain or maintain access to lands and resources, one needs to gather information from other settings to begin to build a theoretical perspective of how resource institutions are configured (and reconfigured) to meet the evolving needs of resource users. It is not the intent of this chapter to weigh the relative merits of alternative resource institutions in some substantive manner but rather to demonstrate the fact that co-management institutions are evolving, and in many cases flourishing, in response to an array of resource issues, often involving conflicts.[65]

There have been a variety of co-management arrangements documented for a diversity of resource types throughout the world. This chapter will pull from these examples in order to illustrate how different groups have adapted to resource strain and management confrontation. These include additional examples from Canada, supported by cases from Alaska and Russia (see Fig. 10). These examples by no means provide a complete account of the great diversity in contemporary co-management institutions but rather demonstrate how variations among differing institutions can be accounted for by the different types of resource crises as well as the character of the arrangement ultimately struck. That is, these institutions represent numerous types, and no one typology can ultimately be determined as correct (Young 1982).

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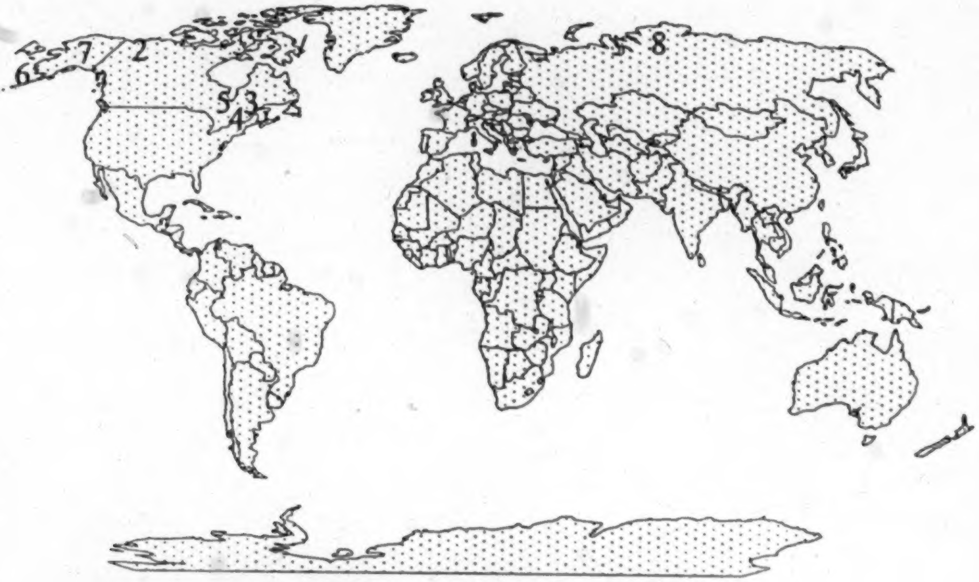
[65] Owing to the limitations of a generalized institutional analysis this chapter provides only a general account of the formation of various cooperative management institutions. Chapter Nine addresses this issue further by calling into question the value of a generalized approach to institutional analysis.



1. Canada: Co-Management Plan for Southeast Baffin Baluga.
2. Canada: Porcupine Caribou Management Board.
3. Canada: The Barriere Lake Trilateral Agreement.
4. Canada: Wabaseemoong - Ontario Co-Management Agreement.
5. Canada: Wendaban Stewardship Authority.
6. Alaska: Round Island Walrus Co-Management Plan.
7. Alaska: Co-Management of Marine Mammals.
8. Russia: Territories of Traditional Nature Use

Figure 10. Co-Management in the global Context

Throughout this discussion, I have addressed the positive aspects of co-management arrangements between aboriginal communities and state managers. However, this analysis would be incomplete without addressing the potential negative effects of incorporating what is very often a western construct of resource management into the cultural matrix of aboriginal communities. Failing to consider the challenges of integrating these conflicting management institutions can easily result in the co-opting of local resource users rather than any equitable form of cooperation. This chapter therefore identifies the (cross-cultural) challenges most often addressed in the literature regarding local aboriginal involvement as well as examples gained from personal observations during the implementation of the Whitefish Lake Agreement and from other arrangements with which I have been involved.

7.1 Canada: Co-Management Plan for Southeast Baffin Beluga

The Co-Management Plan for Southeast Baffin Beluga was developed in response to management disagreements between the Inuit[66] and the Canadian government. At the heart of the conflict was the belief among government biologists that the population of beluga in the Cumberland Sound area had been severely reduced from commercial harvesting (1920-1950) and could not support the current level of local Inuit hunting.[67]

Despite staunchly disagreeing with government findings, the Inuit, in 1981, agreed to a reduced annual quota of 40 beluga. However, over the next 10 years government biologists continued to express concern over the level of local hunting. These concerns eventually led the Department of Fisheries and Oceans (DFO) to impose a quota of five beluga for each of the three communities. By failing to consider the views of local residents, the externally imposed quota was met with considerable hostility and little compliance.

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[66] The Inuit communities involved in the Plan include Iqaluit, Kimmirut and Pangnirtung.

[67] These findings were based upon aerial and clifftop survey methods that accounted for approximately 500 beluga sightings in the entire southeast Baffin area.

In 1991, in an effort to resolve this conflict, the Planning Committee for Co-Management of Southeast Baffin Beluga was established. Composed of Inuit representatives from each of the three Southeast Baffin communities, along with biologists from the DFO, the Planning Committee recommended that the beluga quota for local communities be increased and that a Management Plan for Southeast Baffin Beluga be drafted.

To implement the Management Plan, the Southeast Baffin Beluga Management Committee was established. The Committee is composed of members representing the Iqaluit, Kimmirut and Pangnirtung Hunters and Trappers Association, the Nunavut Wildlife Management Board, and the Department of Fisheries and Oceans. The Management Committee serves as a forum to consider new information from Inuit and scientific studies from government biologists together, in making recommendations for future research/management initiatives to the Nunavut Wildlife Management Board (Planning Committee for the Co-Management of Southeast Baffin Beluga 1994). The specific measures of the Management Plan call for a balancing of Inuit and scientific knowledge in both management and research objectives. For the Inuit, however, the primary intent of the plan is to maintain, preserve, and enhance the traditional relationship between themselves and beluga in the Southeast Baffin area (Planning Committee for the Co-Management of Southeast Baffin Beluga 1994).

7.2 Canada: Porcupine Caribou Management Board

The Porcupine Caribou Herd is a population that averages approximately 160,000 barren-ground caribou that range from the Mackenzie Delta in the Northwest Territories through the Yukon onto the North Slope of Alaska. Beginning in the 1960s, concern was expressed by user communities regarding the potential impacts of industrial development on the migration and ultimate survival of the Porcupine Caribou Herd (i.e., Mackenzie Valley Pipeline). These concerns were compounded by the long-held sense of dissatisfaction by local communities regarding the (mis)management practices of government wildlife managers.[68] Because of this, user communities insisted that they be provided a more equal role in the management of the caribou, which for countless generations has formed the basis of their culture, economy and identity (Peter and Urquhart 1994: 273).

In October of 1985, the Porcupine Caribou Management Agreement was signed by the governments of Canada, the Yukon and the Northwest Territories, the Inuvialuit Game Council, the Council for Yukon Indians, the Dene Nation and the Metis Association of the Northwest Territories. Through the signing of this agreement local users achieved a recognized role in the management of the Porcupine herd.

The Porcupine Caribou Management Board (PCMB) currently serves as the vehicle for the implementation of the Agreement and is composed of an eight member panel representing each of the signatories.[69] The primary duties of the Board are to facilitate communication between government and user communities in the course of making recommendations to governments concerning the management of the Porcupine Caribou Herb (Peter and Urquhart 1994: 274). The specific goals of the PCMB, as outlined by Peter and Urquhart (1994), include cooperatively managing, as a herd, the Porcupine Caribou and its habitat within Canada to ensure the conservation of the herd while recognizing the proprietary harvesting rights of native users. Approached cooperatively, the primarily goal of PCMB is to enhance communication between governments, native users and other interested parties (i.e., environmental and industrial interests) leading towards the sustainable management of the Porcupine Caribou Herd.

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[68] This dissatisfaction dealt largely with hunting restriction based upon health and population surveys conducted by government managers that conflicted with local perception of the herd's status. For further review see Peter and Urquhart (1994).

7.3 Canada: The Barriere Lake Trilateral Agreement

The Barriere Lake Trilateral Agreement was signed in August of 1991 by the Algonquins of Barriere Lake, the government of Quebec, and the Canadian government. This Agreement evolved in response to the encroachment of resource development (i.e., hydroelectric, logging and recreational hunting) in the traditional territory of the Barriere Lake Algonquins. Pursued by Barriere Lake, the aim of the agreement was the consideration and integration of local land use activities in the management of the lands that serve as the Algonquin traditional territory.

For nearly two years the Algonquins struggled against overwhelming odds to make the trilateral process work.[70] Specifically at issue was the type of management regime that would prevail in the implementation of the Agreement (i.e., what level of authority would local resource users assume). According to Notzke (1993), despite numerous epistemological differences, the Barriere Lake Trilateral Agreement has been successful at laying the groundwork for an integrated resource management plan for a region comprising 1 million hectares. This has been accomplished through the development of a management regime that has recognized and has promoted Algonquin values and has provided a share of resource-related rights and responsibilities to Barriere Lake residents (Notzke 1993). A key element to the Agreement has been the appointment of special representatives from Barriere Lake and the Quebec government who have been assigned to supervise the process and have been given the authority to make and apply decisions to the provisions of the Agreement. According to Notzke (1993), this cooperative approach to management has created a climate favorable for future joint management initiatives between aboriginal resource users and government managers across Canada.

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[69] The PCMB is composed of representatives from the Yukon Territorial Government (2), the Council For Yukon Indians (2), the Inuvialuit Game Council (1), the Dene Nation (1), the Metis Association of the Northwest Territories (1) and the government of Canada (1).
[70] For further review see Notzke (1993).

7.4 Canada: Wabaseemoong - Ontario Co-Management Agreement

In 1983 the river system of the Wabasseemoong Independent Nations (WIN) was contaminated from mercury run-off originating from a local pulp/paper mill, halting the WIN's commercial fishery. The loss of the local fishery prompted the government of Ontario to enter into an agreement that would facilitate the development of alternative socio-economic initiatives for members of the WIN. However, following a five year review of the agreement it was determined that the WIN had largely been excluded from economic development opportunities taking place within their traditional territory.

Recognizing this, the government of Ontario and the WIN entered into a Memorandum of Understanding designed to implement a co-management agreement governing all proposed development in the traditional territory of the WIN. According to Masters (1997: 2), the co-management of the WIN traditional territory has been approached through the implementation of an institution for the joint administration of lands and resources within the Wabaseemoong Traditional Land Use Area. The principal tool for achieving cooperative management has been through the joint development of the Wabaseemoong Sustainable Resource Management Plan, which is based upon community involvement and consultation (Master 1997:2). Through a committee structure composed of representatives from the Ontario Minister of Natural Resources, WIN, and third party stakeholders (i.e., logging contractors, tourism interests), Wabaseemoog has assumed an equal role in the planning, management, development, and conservation of its traditionally used lands and resources. It is the belief among band members that through the co-management process Wabaseemoong should eventually become self-sufficient through the proper management of traditional lands (Masters 1997: 2).

7.5 Canada: Wendaban Stewardship Authority

By way of a Memorandum of Understanding signed between the government of Ontario and the Teme-augama Anishnabai, the Wendaban Stewardship Authority (WSA) was established. This "Treaty of Co-Existence" represents a mandate to plan, implement and regulate cooperatively all activity taking place within the traditional territory of the Teme-augama Anishnabai (Dwyer-Smith 1997: 3).

The Wendaban Stewardship Authority is represented by a twelve member panel of which six are appointed by the Teme-augama Anishnabai and six by the Province of Ontario, along with a mutually appointed Chair. Decisions are made by consensus, facilitated by the non-voting Chair. According to Dwyer-Smith (1997: 4), the WSA has approached co-management through "holistic land and resource use", that emphasizes an ecosystem approach to resource management planning. In this way cooperative land management harmonizes human activity in non-conflicting ways, maintains the natural integrity of the land and provides the best long-term use and enjoyment of their natural heritage (Dwyer-Smith 1997: 4).

7.6 Alaska: Round Island Walrus Co-Management Plan

In 1960, the State of Alaska legislature created the Walrus Island State Game Sanctuary in an effort to protect a walrus population nearly decimated by EuroAmerican commercial harvesting. Unbeknownst to the Yup'ik hunters of Togiak and other Bristol Bay communities, Round Island, a traditional use area, was included in the boundaries of this newly created sanctuary, and was subsequently closed to all hunting activity.[71]

With the passage of the Marine Mammal Protection Act (MMPA) in 1972 the federal government assumed management responsibility for walruses in Alaska. Under the MMPA the subsistence hunting of marine mammals by Alaskan Natives could only be restricted if a population was considered depleted; this was not the case at Round Island. Despite a summer return of approximately 8,000 to 12,000 walrus, and declared 'healthy' once again, Walrus Island State Game Sanctuary remained closed to all hunting activity (Fall and Chythlook 1998).

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[71] This fact was demonstrated in 1962 when hunters returning from Round Island were met by State of Alaska enforcement officers who announced the walrus hunt was illegal and arrested one hunter for his involvement.

In 1991, the Togiak Traditional Council (TTC) submitted a proposal to the Alaska Board of Game to reopen Round Island to a hunt of ten walruses. According to Fall and Chythlook (1998: 60), the proposed hunt would be administered by the TTC in cooperation with the Alaska Department of Fish and Game with the primary intent to reverse the hastened erosion of the Togiak culture. In response to TTC's proposal a Task Force was established to determine the merits of the proposal as well as the impact of a controlled harvest on Round Island walrus.[72] The Task Force found that the effects of a controlled harvest would have no serious impacts and acknowledged the cultural significance of reestablishing a hunt for Togiak and other Bristol Bay communities. Despite the Task Force's findings, TTC's proposal was rejected in March of 1993. However, the Alaska Board of Game did pass a resolution supporting a plan that could show how the State of Alaska, the U.S. Fish and Wildlife Service (USFWS) and TTC might cooperatively manage a controlled hunt.

To develop this plan, a working group consisting of the Qayassig Walrus Commission (QWC) (who represented the walrus hunters of the Bristol Bay region), the Alaska Department of Fish and Game, USFWS and the Eskimo Walrus Commission (EWC) signed a Cooperative Agreement Governing Subsistence Walrus Hunting on Round Island, Bristol Bay, Alaska. According to Fall and Chythlook (1998: 61), the implementation of this cooperative framework is to provide for the subsistence uses of walrus, protect the integrity of the Walrus Island State Game Sanctuary, determine who is eligible to participate in the hunt, allocate the allowable take among crews/communities, and coordinate all activity to minimize the disturbance to the Round Island walrus. According to the *Anchorage Daily News*, "Round Island has become a model of cooperation - the Round Island [walrus] hunt is a prototype of what can be accomplished when determined local residents make their voices heard and when state and federal officials listen" (in Fall and Chythlook 1998: 62).

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[72] This task Force consisted of representatives from TTC, the Eskimo Walrus Commission (EWC), the Nushagak Fish and Game Advisory Committee, the U.S. Fish and Wildlife Service, the National Wildlife Federation, and the Alaska Department of Fish and Game (Fall and Chythlook 1998: 61).

In 1997, the Supreme Court of Alaska ruled that the State Board of Game lacked the authority to limit native access to the Sanctuary, thereby clearing the path for local hunters to resume traditional stewardship practices. However, because the management plan was considered such a cooperative success, the Court's ruling has had no practical effect on the Round Island walrus hunt and continues to be cooperatively managed in meeting both local and state objectives (Fall and Chythlook 1998: 62).

7.7 Alaska: Co-Management of Marine Mammals

In February, 1997, the Alaska Nanuuq (polar bear) Commission, the Eskimo Walrus Commission, and the Alaska Sea Otter Commission entered into an agreement with the United States Fish and Wildlife Service (USFWS) that set in motion a range of co-management initiatives aimed at the conservation of Alaska's sea mammal populations. This agreement, long pursued by Alaska's Native organizations, recognizes the need for shared management and conservation responsibility while acknowledging the right of access by Native Alaskans to existing sea mammal populations.

Under the terms of the agreement co-management initiatives would begin in 1998 with the establishment of local and regional co-management structures. These boards are composed of local resource users, representatives from each of the three Native organizations noted above, the USFWS, and representatives from the Alaska Department of Fish and Game (ADFG). The primary objectives of co-management boards include the development and implementation of local management plans, establish a cooperative enforcement authority, record local knowledge to be incorporated into management planning, biomonitoring, harvest reporting, and the development of a Bilateral Conservation Agreement with Russia for transboundary populations of polar bear and walrus (Batten 1997: 1). According to Dave Allen, Alaska Regional Director of the USFWS:

> These agreements are the first step in a new direction for wildlife management. They will provide a working structure that joins the science of wildlife management of the USFWS together with the traditional knowledge and daily subsistence interactions of the indigenous peoples who have co-existed with this wildlife for thousands of years (in Batten 1997: 1).

For native wildlife users this agreement facilitates a greater, as well as a legally recognized, role in management responsibility. Further, this agreement establishes a forum for native communities to express concern regarding contested management practices (e.g., harvest quotas, species collaring) that can lead toward cooperative change, thereby strengthening the traditional relationship Alaska natives have long shared with the mammals of the sea.

7.8 Russia: Territories of Traditional Nature Use

Since the 1980s leaders of the indigenous rights movement in Russia have called for the establishment of "territories of life" or zones where non-traditional (i.e., industrial) activities would be barred, and traditional land use activities promoted. While this example deviates from the examples discussed thus far, these "territories of life" offer a unique example of how indigenous peoples are responding to the erosion of their traditional land base brought about by the encroachment of industrial development.

Efforts to protect the traditional activities of Russia's indigenous peoples first appeared in legislation in 1989. At this time state institutions of power called for the establishment of delineated areas in which indigenous peoples could practice traditional forms of economic activities (i.e., herding, hunting, trapping, fishing and gathering). These areas were to be confirmed as "inalienable property of the Peoples of the North, which without their agreement cannot be subject to alienation for industrial or other development which is not tied to traditional economic activities" (Fondahl 1997b: 312).[73] These areas were to be selected from lands that had not yet been influenced by industrial development and continued to support the traditional practices of resident indigenous peoples. Under this plan, indigenous groups would extinguish their claim to territorial rights to lands and resources in return for legislatively confirmed control over territories defined as traditional use areas.[74]

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[73] Article 8.2 of the Draft Law states "Legal status of Numerically Small Peoples has as a cornerstone the creation of TTP's [traditional use areas] as specially organized places of residence and economic activity (reindeer pasture, fishing and hunting areas), not subject to withdrawal and industrial development, created to ensure the development of traditional forms of economy in places of residence and economic activity of indigenous peoples of the North, especially not numerous ones."

[74] This is not unlike the Alaska Native Claims Settlement Act (1971), the James Bay Northern Quebec Act (1975) and the Inuvialuit Final agreement (1984) where indigenous residents surrender their claims to lands and resources in exchange for exclusive rights to lands and resources within a delineated territory.

Thus far few areas in the Russian north have been set aside as traditional use areas. However, the province of Chita has set in motion a process that would establish three of its northern regions (26.6 percent of northern Chita) as "Territories of Traditional Nature Use of the Evenks of the Chita Province" (Fondahl 1997b: 314).[75] These areas of Traditional Nature Use will exclude any industrial development that may negatively affect the traditional land based activities of local residents. However, resource development initiatives found to be beneficial to local residents may be approved following a referendum of the local indigenous population. While noting the challenges ahead, Fondahl (1997a: 82) maintains that by vesting rights to substantial areas of the north to resident indigenous peoples, the potential for sound development of both traditional and industrial activities will ultimately enhance the potential for a more rational approach to development and locally defined socio-economic progress.

7.9 Barriers to Co-operative Management

As noted in Chapter Six, co-operative management agreements demand significant commitments from local communities if they are to assume an equal role in the management process. However, in assuming such a role, aboriginal communities (as well as government managers) have needed to adjust to a number of cross-cultural challenges associated with institutionalized management.

The intent of this section is not to delineate specific problems associated with particular agreements but rather to identify some of the cross-cultural barriers that may limit aboriginal involvement in the cooperative management process. Thus, the goal is to increase recognition that differences exist and that these differences can not only interfere with the extent of aboriginal participation but can also place a cultural 'strain' on aboriginal communities which are already pressured by change.

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[75] A number of limitation have been recognized in this process, including what constitutes 'traditional' activities and who actually represents the indigenous population. These issues, however, fall outside the scope of this section. For further review please see Fondahl (1997a, 1997b).

7.9.1 Planning the Future

The co-operative management of lands and resources relies upon arriving at management objectives that will guide human behavior in relation to environmental interaction. There are, however, a number of cross-cultural differences among aboriginal resource users and government wildlife managers that represent considerable obstacles to this management approach. Gallagher (1988: 95) maintains that many of these differences are grounded in conflicting worldviews, in one of which the future is perceived as uncertain and beyond control as opposed to one that is predictable and able to be manipulated.

To speak of the future with a level of certainty is considered a basic component of western resource management (e.g., setting quotas on migratory species). To wildlife biologists, effective management ensures a viable future for wildlife stocks based upon formulated predictions of reproduction and growth. However, to Whitefish Lake elders the idea of planning the future is not only presumptuous but can also be spiritually dangerous by demonstrating a sense of arrogance towards the non-human world. In fact, the term management is constantly rebuffed by local residents owing to its aura of superiority over the environment. To Whitefish Lake residents the actualization of the spoken word potentially jeopardizes the reciprocal relationship shared with the environment. Hensel and Morrow (1998: 70) have noted similar concerns among Yup'ik fishermen (subsistence/commercial) involved in the Kuskokwim River Salmon Management Working Group[76] regarding public announcements of fishery closings. Rather than saying there are no salmon available for harvest, Yup'ik communities have urged state officials to announce that the salmon have yet to pass through the river. It is the belief among community residents that since non-human entities (in this case salmon) share a moral conception with humans, stating implicitly that there are no salmon in the river would cause offense, thereby worsening the situation. Tanner (1979) and others (e.g., Nelson 1980,1982, 1983b; Fienup-Riordan 1990; Wenzel 1991) have also noted an awareness among aboriginal peoples that human actions and the spoken word influence social relations with animal populations.

Stevenson (1997: 3) has noted, however, that co-management agreements are most often implemented in the language and ideology of the dominant culture (e.g., quota, harvest, stock, licenses). Thus the norms, rules and codes of conduct imposed on aboriginal resource users are not those held by the community but rather the state. Thus, when government managers seek local involvement in the planning process they may be asking aboriginal communities to be involved in a process that to them is culturally inappropriate. This creates a cultural dilemma where there is a need to protect co-operatively the resources on which aboriginal peoples depend, but cultural concerns over management may reduce the willingness of local residents to participate in the co-operative management process (Gallagher 1988: 95).

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[76] The Kuskokwim River Salmon Management Working Group is composed of representatives from Kuskokwim River communities, the United States Fish and Wildlife Service, Alaska Department of Fish and Game, and non-Native commercial fisherman and processors, to arrive mutually at commercial fishing openings/closings and allocations.

These concerns are, however, rarely recognized by government resource managers or for that matter articulated by aboriginal resource users. Because of these internalized misunderstandings a common belief has arisen among state managers that aboriginal communities lack a genuine interest in becoming more involved in the management process. In turn, local resource users have become increasingly frustrated with state managers' denial of local beliefs and concerns, thereby adding frustration to an already formidable process.

7.9.2 Problems of Local Participation

There are obvious logistical challenges facing aboriginal involvement in the co-operative management process. These challenges include the difficulty (i.e., terrain, weather conditions) of regular travel to distant regional centres to participate in meetings,[77] spending time away from friends and family, and meeting the high costs associated with northern travel.[78] Aside from these logistical problems, however, are a number of cross-cultural barriers that limit aboriginal involvement in the management and planning process. These barriers are often the very framework in which co-operative management agreements are structured. That is, rather than co-operatively developing an institutional model that recognizes and promotes cultural differences, the western paradigm of management is simply applied (i.e., committees, reports, agendas and timetables) only with the addition of aboriginal participants.

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[77] This involvement has in many cases resulted in what Arnold (1983) has referred to a participatory "burnout" brought about by continually responding to surveys, attending meetings and reviewing and commenting on management plans.

[78] Aside from the logistical challenges, aboriginal resource users are often involved in mixed-economies that are dictated by seasons and resource variability. This poses additional challenges to resource users who must consider the needs of their family over time spent in regional centres attending meetings.

Within the institution of western management the public meeting has served as the traditional strategy for adding a democratic element to the decision-making process (Gallagher 1988: 95). These forums tend to encourage debate among participants in arriving at the most appropriate strategy for managing a specific resource. In reaching consensus, issues are publicly debated in an attempt to sway the opinions (i.e., votes) of fellow board members. However, this approach stands in staunch contrast to aboriginal forms of consensus building.

Contrary to western management, the traditional means of gaining consensus for Whitefish Lake residents involves a considerable amount of informal discussion facilitated by household visits prior to any decisions being collectively made. It has been my experience that aboriginal peoples have little interest in challenging the opinions of others (especially in a public setting) nor do they find it necessary to try to change the opinion of another if one feels strongly about their views.

In addition, public debate has normally been avoided by Whitefish Lake residents because such displays are often seen locally as being pretentious, a role considered inappropriate for local residents.[79] Kleinfeld (1972) has made similar observations among aboriginal (Athabaskan) school children who demonstrated a reluctance to answer questions asked by teachers, not because they did not know the correct answer but because by the answering the question they would appear to be "boasting."[80]

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[79] This reluctance was first observed during fieldwork among the Koyukon and Gwich'in Athabaskans in Alaska during discussions regarding the management of a local fishery. Local residents who took an active role in the discussion were 'teased' following the informal meeting. I have also witnessed a reluctance among Whitefish Lake residents (specifically the elders) to become actively involved in meetings with non-band members. This of course is generalized as no two individuals nor cultures are the same.

Another barrier to local participation lies in questioning methods or the ways in which information is sought. The direct question, which serves as an accepted way of gathering information in western culture, is often considered inappropriate by aboriginal participants. According to Gallagher (1988: 96) aboriginal peoples are far more likely to "talk around the question" until the information is provided rather than responding directly. Nelson (1980) has similarly noted that it is uncommon for Inupiat of northwest Alaska to give direct advice or tell another person what to do other than through narrative. Unfortunately, few wildlife managers can fully appreciate the meaning and complexity of narratives, which has led to misunderstandings and continued cultural polarity. Further, miscommunication often results in an unnecessary loss of trust between local resource users and state managers that remains internalized as a constant source of tension. According to Merculieff (1994: 408):

> ...cross-cultural communication breaks down when people do not understand that each comes from a different world view, a different frame of reference, which leads people to different conclusions because they use different facts to interpret the same issue.

In addition to the use of narratives and conflicting questioning styles there are other more subtle barriers that may threaten the co-operative management process. These differences include pause length, eye contact, and socially accepted courtesies. According to Scollen and Scollen (1981) these differences can cause confusion because local

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[80] Gallagher (1988: 96) has noted that neither aboriginal nor non-aboriginal people enjoy speaking out in public about a subject not well understood as is often the case among aboriginal peoples unfamiliar with procedures, terms and concepts used by resource managers.

(aboriginal) residents and western managers demonstrate communication styles exclusive to their native language. These differences will therefore affect the way in which information is shared and the way people relate to each other while speaking (Gallegher 1988: 96). Scollen and Scollen (1981: 28) maintain that:

> In present day Alaska and Canada, many people who do not speak any Athabaskan languages have nevertheless learned Athabaskan discourse patterns which are essential for effective communication within the village, even though the language used may be English.

Scollen and Scollen (1980: 17) have summarized these perceptual differences in the following:

What's Confusing to English Speakers About Aboriginal Speakers	What's Confusing to Aboriginal Speakers About English Speakers
They do not speak	They talk too much
They keep silent	They always talk first
They avoid situations of talking	They brag about themselves
They play down their abilities	They don't help people even if they can
They deny planning	They have to plan for the future
They avoid direct questions	They ask too many questions
They never start a conversation	They always interrupt
They talk off the topic	They don't give others a chance to talk
They never talk about themselves	They aren't careful how they talk about people or things
They are slow to take a turn in talking	They go on-and-on when they talk
They are too indirect	They are confrontational

Table 7. Perceptions of Cross-Cultural Communication
(adapted from Scollon and Scollon 1980: 17).

Summary

Because the advent of aboriginal involvement in institutionalized resource management is relatively new and is continually evolving, the impact of these cross-cultural challenges remains speculative. However, if co-operative resource management is to become an institutional reality, a greater understanding of how cultural differences - worldview, decision-making style, and communication style - affect decision-making will be required if cultural barriers are to be identified and cultural bridges are to be built.

From the examples presented above, however, is clear that aboriginal resource users have recognized that if they are to enhance their access to lands and resources there is a need to become involved in the institutions that govern those interests. Because access to lands and resources remains fundamental to aboriginal cultures, adapting to the challenges associated with institutionalized management is seen as a necessary strategy to ensure aboriginal interests are recognized. Whether the relationship between aboriginal resource users and government resource managers is one of competition or cooperation will depend largely on the strategies used by aboriginal peoples when pursuing these co-operative arrangements. These strategies, and specifically the approaches used by the WFLFN, are presented in the following chapter.

8. Co-operative Management as a Strategy for Local Empowerment

Introduction

This chapter addresses the cultural flexibility of the WFLFN in adapting to the institutional framework that, for the past century, has influenced their involvement with traditionally used lands and resources. This flexibility relates directly to adaptive strategies employed by the WFLFN in an effort to influence the behavioral patterns of neighboring and competing populations. Central to this approach is the formation of a group identity and the sense of cooperation that arises from this social configuration. This chapter concludes by showing how strategies for co-operative management have led to an operational empowerment of the WFLFN leading towards a more equitable[81] role in the management of traditionally used lands and resources.

8.1 Adaptive Strategies

In this analysis adaptation represents the cognitive capacity to visualize change and to conceive of new institutions that promote efficiency, equity and desired outcomes for the WFLFN. This includes the adoption of strategies that mobilize social and material resources to promote social action, interaction, and empowerment. Thus adaptive strategies represent particular adjustments used by Whitefish Lake to attain specific goals. As North (1990: 81) has noted:

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[81] 'Equity' is this regard refers to the distribution of values among members of an institution and, more specifically, to the conformity to some normative standard of what is fair or just. With respect to co-operative resource management, the challenge is to determine the impact of institutional arrangements on who gains what and whether those results are normatively desirable (Young 1982: 125).

> The society that permits the maximum generation of [strategies] will be most likely to solve problems through time. Adaptive efficiency, therefore, provides the incentives to encourage the development of decentralized decision-making processes that will allow societies to maximize the efforts required to explore alternative ways of solving problems.

As used in this analysis, adaptive strategies represent the mechanisms used by Whitefish Lake to gain access and influence over traditionally used lands and resources. The Whitefish Lake Co-operative Management Agreement therefore represents a collection of individual strategies used by Whitefish Lake in their effort to alter existing social relationships. The Whitefish Lake Co-operative Management Agreement, as an institution, represents an encompassing strategy promoting social reform which will provide a basis in which future decisions are made regarding the allocation, distribution and conservation of resources, thereby establishing an institutional framework that has the potential to redefine group behavior.

According to Bennett (1996: 49) the repeated use of adaptive strategies generally results in an adjustment of the social systems that frame human behavior (i.e., cultural pattern, subsistence system, institutions). Over time the repetitive use of adaptive strategies become incorporated into a group's cultural style - a behavior pattern that is then defended as 'right' or 'good' (Bennett 1969: 16). Adaptive strategies therefore have the potential for reordering social systems leading to fundamental changes in the way in which behavior is viewed and in this example the way in which resources are collectively managed.[82]

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[82] This is similar to Firth's (1955) use of 'organization' and 'structure' in that 'organization' represents an immediate response or a behavioral adjustment designed to cope with change; while 'structure' is used to represent the evolution of values and norms ingrained in a group's behavior. According to Bennett (1996),

It is important to note that the use of adaptive strategies to alter the cultural pattern of a group generally involves a collective decision and a pre-conceived idea of the potential outcome (Bennett 1996: 49). This has proven true in the establishment of the Whitefish Lake Agreement where a degree of debate and a considerable amount of leadership, influence, and concessions were made by band leaders for the purpose of satisfying popular needs and demands. Ostrom (1998: 8) has noted however that individuals caught in social dilemmas[83] are far more likely to innovate and try to change the structure of existing institutions in order to improve outcomes, thus far more accepting of strategies promoting change.

8.2 Local Empowerment

The notion of local empowerment is relevant to discussions on co-operative resource management only if the concept is used in the context of the decentering of hegemonic control by the state and allowing aboriginal communities to articulate aspirations and concerns within an institutional framework that acts upon the needs and fundamental rights of resource users (Sefa Dei 1995: 148). Thus local empowerment represents a process that effectively links Whitefish Lake to the planning process, such that their voices carry both authority and responsibility in much the same way as do the other actors, thereby enabling the WFLFN to become part of an integrated, self-organizing and thus self-empowering social system (Keith and Neufeld 1988: 95).

Firth's temporal distinction between organization and structure was the first to liberate cultural anthropology from its preoccupation with reified, fixed systems and began the transition to an adaptational framework.

[83] According to Ostrom (1998: 1), social dilemmas occur whenever individuals in interdependent situations face choices in which the maximization of short-term self-interest yields outcomes leaving all participants worse off than feasible alternatives.

By definition the verb empower means "to invest with legal power", "to authorize", and "to enable."[84] In relation to the WFLFN, empowerment represents the promotion of inclusiveness and accountability in an institutional framework that provides legitimacy to the co-operative management process. More generally, empowerment represents the capacity to adapt to the changing socionatural environment by implementing strategies to alter existing social systems. This framework for empowerment therefore extends beyond participation to include strategies that can enable local residents to understand fully the reality of their environment (social, political, ecological, economic and cultural), to reflect on the factors that shape that environment and to take steps to affect changes and to improve the local situation (Singh and Titi 1995: 13). Thus strategies leading to the empowerment of the WFLFN represent options that enhance decision-making opportunities in accordance with locally defined preferences. This transition therefore promotes a heightened social awareness, higher levels of institutional involvement and the utilization of new strategies for self-empowerment.[85]

The strategies outlined in the Implementation Plan[86] therefore represent tools of empowerment that are being used to enhance Whitefish Lake's capacity to: 1) participate in the land management process; 2) acquire knowledge, skills and training; 3) gain greater access and influence over traditionally used lands and resources; 4) acquire a heightened level of economic self-sufficiency; and 5) establish an institutional space to articulate cultural assertions and well-being, including the application of traditional knowledge.

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[84] As defined in the Webster's II New University Dictionary.

[85] Sefa Dei (1995:148) maintains that communities require autonomy over their own resources and must be able to dictate their own path if they are to meet basic livelihood needs and group survival. "After all, no one can empower anyone."

[86] The Implementation Plan of the Cooperative Agreement is presented in Chapter Six.

These strategies therefore represent key features which go beyond consultation, avoids co-optation and provides the basis for community empowerment (Keith and Neufeld 1988: 95).

8.2.1 Group Identity as a Strategy for Empowerment

Whitefish Lake has recognized that empowerment cannot be achieved through isolation, autonomy or independence; rather, self-empowerment will only be gained through a multi-actor framework of co-operation, coordination and a balance of interests and shared responsibilities that can provide Whitefish Lake with redefined powers and authority (Keith and Neufeld 1988: 95). In order to achieve this framework Whitefish Lake has incorporated strategies into the Implementation Plan that promote involvement and interaction between themselves and government representatives. Through the establishment of local working groups and regional implementation and steering committees, Whitefish Lake plans to establish a group identity, facilitated through the co-operative management process, that places collective interests over the individual and traditionally prioritized needs of government and/or industry. Thus Whitefish Lake has recognized that the more an institution resembles a collective or group identity the more likely conflicts over the management of their traditionally used lands and resources can be effectively resolved.

Group identity has been defined (Singleton and Taylor 1992: 315) as a set of people with: 1) a more or less stable population; 2) who expect to continue to interact with one another for some time to come; 3) whose relations are direct (unmediated) and multiplex; and 4) who share a common belief, including normative values and preferences, beyond those contributing to their social dilemma. However, lacking the above criteria does not limit the opportunities of establishing a group identity in the future; rather, group identity can still be created through cooperation (e.g., a co-operative management agreement) where individuals can agree upon rules that they consider fair and effective for solving specific problems, thereby developing a sense of community where one did not exist previously (Ostrom 1992: 348).[87] Ostrom (1992: 348) maintains that any agreement that does not enhance a sense of community (group identity) among those involved would itself be ineffective over the long-term.

According to Singleton and Taylor (1992), when conflict over valued resources is defined in terms of individual need, self-interest will most often take precedence in the decision making process. However, Brewer and Schneider (1990) and others (e.g., Messick and Brewer 1983; Komorita and Parks 1994; Ostrom 1998) have shown that when individuals assume a group identity, the collective interest is generally given priority over individual desires, thus personal identification with a particular group encourages individuals to prioritize group interests over individual needs.[88] DeCremer and van Vugt (1998: 3) similarly maintain that when individual actors perceive themselves as a collective, a sense of need often arises to live up to the standards of the group, thereby placing a higher utility on collective welfare. This group identity is then reinforced each time individuals place the collective welfare above their own self-interests.

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[87] Despite representing a more or less stable population that, for the foreseeable future will continue to interact, and whose relationship is unmediated and certainly multiplex, there exist significant differences in the normative values and beliefs systems of the WFLFN and government representatives.

[88] For further review of 'group identity' as a means of conflict resolution see Messick and Brewer (1983); Brewer and Schneider (1990); Singleton and Taylor (1992); Komorita and Parks (1994); Ostrom (1998).

Whitefish Lake has recognized that the establishment and maintenance of a group identity depends largely on the level of communication that can be established between themselves and government representatives. Ostrom (1998: 6) has noted that there are substantial increases in the level of co-operation when individuals have the means to communicate face-to-face about common concerns. Recognizing this need, the implementation of a comprehensive communication strategy was considered vital to the ultimate success of the co-operative management process.

As outlined in the Implementation Plan the purpose of the communication strategy is three-fold. First, it is to promote a general awareness (locally, provincially, and industrially) of the structure and goals of the co-operative management agreement. This communication strategy also serves as a public endorsement of the legitimacy of the Whitefish Lake Agreement and is to encourage others (i.e., industry) to accept it as an institutional authority. Second, this strategy is to facilitate the development of formal and informal communication networks among various interests in order to match the skills, services, and capabilities of the WFLFN with potential economic development opportunities. And third, it is to coordinate the distribution of written material from various sources which are considered relevant to the objectives of the Agreement. In addition, the WFLFN is implementing a process aimed at improving communication between Whitefish Lake trappers, Gift Lake Settlement trappers, and forest companies operating in the area regarding a process of consultation prior to the development of harvesting plans that will affect registered trapping areas.[89]

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[89] This issue was addressed in Chapter Six.

Through personal interaction, Whitefish Lake, government and industry can begin to develop relationships and levels of trust in order to resolve matters of common concern. If a sufficient level of trust can be established, agreements and personal promises can be made that places at risk an individual's own reputation as one who keeps their word, thereby making reciprocity an even more beneficial strategy (Ostrom 1998:14).

Gupta et al (1995: 114) maintain that the ability to extract information personally, provide feedback, or influence dialogue depends upon the channel of communication the two ends exercise. The extent to which communication is exercised directly affects the range of options the group has at their disposal. Thus dialogue through personal and regular interaction promotes mutual empowerment that recognizes the current realities and benefits of interdependence and of relationships which are based increasingly on multi-channel flow of information (Singh and Titi 1995: 18). Specifically, personal communication can enhance Whitefish Lake's capacity to articulate normative values, increase trust (thereby influencing behavioral patterns of others), exchange mutual commitments, reconcile cultural differences, add additional values to the subjective payoff structure, and enhance co-operation by transferring necessary information in arriving at optimal strategies (Ostrom 1998: 7).

Therefore, where conflict exists over the use and access to natural resources, routine communication between the WFLFN and government can promote changes in social behavior that can lead to the reordering of pre-existing social structures traditionally relied upon in making decisions. However, whether a sufficient level of trust is or is not established, personal and direct communication provides Whitefish Lake with the opportunity to influence behaviors in accordance to with their own preferences and makes possible new bargains and compromises to be struck. As one of the lead negotiators for the WFLFN stated, "we [Whitefish Lake] have absolutely nothing to lose and everything to gain by being involved in this process" (Chalifoux 1998).

8.2.2 Empowerment Through Mapping

In order to make informed land management decisions a thorough understanding of community land and resource use patterns is required. Therefore, as presented in Chapter Five, the WFLFN has undertaken land use research that documents the cultural values of Whitefish Lake residents and has integrated those values with the economic interests of resource developers operating in the area; thus the identification of both market and non-market values has been initiated. The ultimate purpose of this strategy is not to restrict future land and resource use per se, nor is it a form of cultural triage, but rather it is to be used as a guide for sound land use initiatives that serve to preserve and protect the cultural values of the WFLFN while providing an information base necessary for future economic development planning for Whitefish Lake.

In the co-operative management process, the use of local knowledge, presented through traditional land use maps, is central to effective land use planning. The textualization of landscape knowledge provides the basis of information necessary for effective management while providing Whitefish Lake with the tools needed to address land use issues accurately. Land use mapping in this sense provides government and industry with a textualized account of the historic and contemporary land use activities occurring within the traditional territory of the WFLFN. Used in this capacity, land use mapping has provided Whitefish Lake with the means to articulate visually arguments that support their point-of-view in the co-operative management process. For the WFLFN, land use maps have served as a vehicle for dialogue between themselves, government and industry. It gives a clear indication of the territory utilized by Whitefish Lake residents and provides a basis for governmental understanding of the intimate relationship that Whitefish Lake residents have with a specific geographical landscape.

In addition to its use in the land management process, land use mapping serves as an effective tool for political empowerment. Maps have been used to defend territories of land and sea by showing that aboriginal landscapes have long been occupied and sustainably managed. Strategies for mapping the Whitefish Lake landscape have too effectively challenged the justification of state intrusions (political and industrial) by visually 'authenticating' the traditional territory of the WFLFN, thereby contesting government claims that Whitefish Lake lacks a clearly defined land base. For Whitefish Lake, land use mapping has defined the summation of historic and contemporary uses of the area and is a textualized expression of Whitefish Lake's long-standing involvement with the known landscape. Mapping in this sense is a metaphor that speaks a universal language that all can understand and it is this ability to communicate through maps that will help self-empower the WFLFN (Jarvis and Stearman 1995: 61).

Beyond its political component, land use mapping has served as a means of cultural empowerment as well. By visually defining a collective sense of territory, the sense of 'place' has sparked a renewed cultural identity among the Whitefish Lake residents. By bringing both young and old together to communicate about the land a renewed sense of cultural pride and territorial identity has arisen - in essence Whitefish Lake has visually said - "this is our home."

8.2.3 Partnerships for Empowerment

The WFLFN has been involved with the Sustainable Forest Management Network (SFMN)[90] at the University of Alberta since 1994. This partnership was entered into in an effort to arrive at strategies (i.e., research, training, exchange of knowledge) leading towards the multi-dimensional sustainability of the boreal forest. As primary users of the boreal landscape, aboriginal communities play a primary role in shaping the research priorities of the SFMN. Whitefish Lake's specific involvement has been demonstrated by: 1) providing direction and identifying research needs based upon recognized concerns at the community level; 2) articulating issues of local concern regarding forest management practices; 3) has provided an additional increment of knowledge (TEK) that has contributed to sustainable forest management initiatives; and, 4) has provided accurate and culturally-relevant advice to industry, government, and university partners.

Whitefish Lake has recognized that there exists a need to identify and initiate forest research that represents the priorities of aboriginal communities rather than the historically determined needs of government and industry. Whitefish Lake's involvement with the SFMN therefore represents a strategy to articulate locally defined concerns and needs that begin to recognize the cultural landscape of the Whitefish Lake community as well as their socio-economic aspiration.

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[90] The SFMN is designed to incorporate university researchers in biology, forestry, engineering and social sciences along with industry and First Nations, in an interdisciplinary approach to the sustainable management of the boreal forest in Canada. Through the development of innovative management techniques and technologies the SFMN serves as a catalyst for reconciling ecological realities with the needs and aspirations of aboriginal forest users. The goal of the SFMN is to find solutions that sustain the ecological integrity and long-term productivity of the forest while providing socio-economic benefits for aboriginal communities now and in the future.

Through an expanded network of partnerships (i.e., First Nations, government, industry and university), Whitefish Lake has been involved in Network forums (i.e., workshops, conferences, and roundtables) that have exposed them to a diversity of interests related to the management and health of the boreal forest. This involvement has enabled Whitefish Lake to assume a more active (and visible) role in forest management initiatives taking place in Alberta. At the local level this partnership has facilitated capacity-building programs in forest and resource management (i.e., land use research techniques, GIS training) that will enhance Whitefish Lake's role in the management of Alberta's lands and resources.

The partnership that has been established between Whitefish Lake and the SFMN is not unlike the partnership strategies used by Brazilian rubber-tappers from the extractive reserves of the Upper Jurva' and ecologists from Brazilian universities. Both are an attempt to prevent the intrusion of unsustainable forestry practices through the establishment of multi-actor partnerships. In the case of the rubber-tappers, it was they themselves who created the extractive reserves, promoting ecologically sustainable practices which have led to cultural and ecological resilience.[91] Whitefish Lake's involvement within the SFMN has similarly established links with other actors, each connected in flexible ways to each other, in the formation of strategies promoting ecological sustainability and community self-empowerment.

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[91] For further review see Begossi (1998).

These links, and the partnerships Whitefish Lake has established extend beyond the local level to include national and international exposure. This was most recently demonstrated through Whitefish Lake's involvement in the *1999 International Symposium on Society and Resource Management* held at the University of Queensland, in Brisbane, Australia. This forum brought together over 500 researchers, professionals, students, NGOs, and indigenous resource managers from more than 30 different countries in an exchange of ideas and resource management strategies. This international exposure has enabled Whitefish Lake leaders to meet with, and form ties with other indigenous communities who are faced with similar challenges in relation to resource conflict. The information networks that have been established from these exchanges enable Whitefish Lake leaders to return to their community and apply the ideas and strategies gained internationally to local resource management issues.

This involvement and the networks that have been established from these exchanges go to support social movement theorists (e.g., Scott 1999; Morris and Mueller 1992; Johnson and Klandermans 1995; Rochon 1998) in suggesting that cross scale institutionalism - or an institution that operates at more than one level - stand a far greater chance of institutional success. That is, by creating new partnerships, Whitefish Lake leaders have been exposed to a new form of socio-political expression which has provided them a role in a coalition aimed at influencing the political process of resource management from the local to the international levels.

8.2.4 Educational Empowerment

Strategies to enhance training and educational opportunities represent one of the primary mechanism for local empowerment. By acquiring additional education and skills and integrating that knowledge with their own local knowledge system, Whitefish Lake residents can increase their control over the decisions that most directly affect their lives. According to Calliou (1997: 228) educational empowerment serves as a central strategy for eliminating cultural biases, ethnocentrism, and outright racism against aboriginal peoples.

Therefore the strategies developed for educational empowerment are to provide local residents with the capacity to contemplate issues of democracy and social justice, strengthen local systems of self-reliance and contribute to a locally defined level of cultural well-being. In this capacity education and training can enhance local involvement in the planning process thereby empowering Whitefish Lake residents to enact measures of social/institutional reform. It is through these strategies that Whitefish Lake plans to assume a more effective role in their future involvement with government and industry. The development of legal, financial, educational and administrative strategies are seen as the basis for effective control to become a reality.

8.2.5 Economic Empowerment

According to Ponting (1997: 104) the realities of welfare dependency have long worked against members of aboriginal communities supporting self-empowerment initiatives because fear of the unknown leads welfare dependent persons to adhere to the status quo. Thus Whitefish Lake's continued exclusion from economic opportunities could further promulgate local perceptions of the normality of economic dependency, thereby reinforcing the acceptance of their own economic marginality. However, through measures of economic self-empowerment Whitefish Lake has begun to assume a collective responsibility for their own future and is taking control of their own self-defined economic development in order to redefine their future involvement with neighboring/competing populations.

As presented in Chapter Six, one of the primary objectives of the Whitefish Lake Co-operative Management Agreement is to enhance economic opportunities for local residents. Specifically, this is being approached by facilitating employment opportunities for Whitefish Lake residents (i.e., additional fire fighting/heli-attack crews, entrance into the commercial fishery, eco-tourism), to co-operatively seek out and secure business ventures and contracts, and to provide education and training opportunities for Whitefish Lake residents. These strategies have been incorporated into the Implementation Plan to enable the WFLFN to become economically self-sufficient and to provide a greater level of cultural flexibility for local residents.[92] Thus the framework for Whitefish Lake's economic development represents adaptive strategies that promote the economic and cultural sustainability of the WFLFN and represents one of the primary mechanisms advocated by the Royal Commission on Aboriginal Peoples (1996: 326-353) to break the trap of economic dependency which has long served to disempower aboriginal communities.

This is not to suggest, however, that all forms economic development promote empowerment. In fact, there have been strategies employed by Whitefish Lake representatives that were seen as disempowering by community residents (and thus maladaptive), and were subsequently abandoned by the Whitefish Lake community. For example, under the negotiated terms of the Memorandum of Understanding signed between the WFLFN and the province (1994), Whitefish Lake secured a Deciduous Timber Permit for 50,000 cubic meters per year to be harvested from the S-9 Forest Management Unit (see Appendix B).[93] To secure this timber allocation the WFLFN created the Whitefish Lake Logging Company, a wholly owned and operated band corporation.

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[92] The correlation between economic development and cultural viability was addressed in Chapter Six.

This strategy, although motivated by socio-economic need, was met with considerable apprehension and resistance by community residents; specifically the elders who were opposed to any involvement in the harvesting of timber from traditional lands. Whitefish Lake leaders argued, however, that timber harvesting would occur regardless of their involvement, and by being involved, Whitefish Lake could develop a harvesting plan that would take into account community concerns (i.e., avoiding areas of cultural significance) while providing economic opportunities for local residents. After considerable debate, Whitefish Lake Logging was established and began harvesting in the winter of 1995-1996 (a decision based primarily on economic necessity).

The first season of operation for Whitefish Lake Logging proved economically successful. In addition to harvesting the allocated 50,000 cubic meters, Whitefish Lake Logging secured an additional 80,000 cubic meters of timber from Tolko Ltd. (the F.M.A. holder), thereby enabling Whitefish Lake Logging to purchase an additional line of equipment (i.e., skidders, delimbers and a target processor) for the 1996-1997 season. This success, however, failed to ease community concerns, leaving Whitefish Lake split between those who favored their involvement in the timber industry and those who saw logging as a direct threat to the preservation of their homeland.

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[93] The Whitefish Lake Timber Permit was for a five year period commencing in 1994.

Despite the economic benefits gained from logging, a growing number of community residents remained opposed to band involvement in the timber industry. Responding to this opposition, Whitefish Lake leaders agreed to disband Whitefish Lake Logging following it's second year of operation; choosing rather to support individual band members (i.e., through low interest loans and equipment leasing) who wished to secure contracts from industrial operators.

This conflict, where individuals are asked to make comparative choices, is what Bennett (1996: 51) refers to as adaptive tolerance: where X may be bad, but it can be tolerated in order to obtain Y. In this case, Whitefish Lake residents were asked to tolerate an economic strategy that required local residents to accept involvement in the very industries that threatened their homeland, in exchange for economic benefits (i.e., employment and revenues gained from the sale of timber). However, for the WFLFN, concern over the industrial development of their traditional lands outweighed the desire for economic growth. Therefore, despite the economic benefits accrued through logging, this strategy did not conform to the local values and norms (i.e., adaptive tolerance) of community residents, resulting in the abandonment of this economic strategy.

8.3 Cultural Viability

As presented in Chapter Six, the development and implementation of the Whitefish Lake Co-operative Management Agreement can be attributed to several factors. First, the WFLFN entered into the co-operative management process recognizing that owing to the prevailing political constraints that continue to govern their relationship with off-reserve lands and resources (i.e., treaty arrangements), gaining exclusive regulatory authority over their traditionally used territory was not a realistic objective. Recognizing this political reality, Whitefish Lake has maintained well defined objectives that, above all, promoted greater institutional involvement in resource management decisions. Their initial and primary objective is not in the exclusion of competing interests but rather is in establishing a process in which issues can be mutually resolved and recommendations can be made regarding land use planning that takes into account the concerns and aspirations of Whitefish Lake residents. Second, because Whitefish Lake has been to a large extent excluded from education, training, and economic opportunities, developing skills and gaining access to capacity-building opportunities is seen as fundamental in assuming a more equitable role in the co-operative management process. Because of this, Whitefish Lake has maintained a long term vision of institutional development that recognizes that success will depend largely on their own self-empowerment. In this way, issues that most directly affect Whitefish Lake residents can be decided and acted upon locally thereby contributing to their own self-defined social development.

It has been suggested however (e.g., Caulfield 1997), that co-management arrangements that fail to establish a broad framework for political and economic rights risk the creation of incipient forms of social differentiation within aboriginal communities. It has further been warned that the adoption of co-management institutions may actually hasten the demise of aboriginal cultures as they wish to be maintained (e.g., Stevenson 1997). While it is true that involvement in co-operative management arrangements may further challenge aboriginal communities already coping with socio-economic change, concerns regarding the cultural viability of aboriginal communities involved in institutional management seem to presuppose a static perception of aboriginal culture. That is, aboriginal peoples have been adapting to socio-economic change for centuries. Rather than being locked into a static cultural continuum, aboriginal peoples, as they exist today, have exhibited a cultural dynamism that has enabled them to maintain a distinct cultural identity while coping (to be sure, some more successfully than others) with continuous cultural, economic and environmental changes. George et al (1995: 71) maintain that the Cree have adapted successfully to European institutions without fundamental internal conflicts from the beginnings of contact, whether in regards to bargaining frameworks established during the fur trade or participation in the state political system. Hedican (1995: 152-153) similarly notes that:

> ...the Cree found ways to adapt to their changing ecological conditions brought about by the receding Ice Age many millennia ago, and then by the coming of the Europeans and the fur trade. The James Bay Agreement and the subsequent hydroelectric development is no different, in essence these are only new challenges that the Cree culture has had to face in order to survive.

Thus the ability of Whitefish Lake to deal with the arrival of fur traders, missionaries, government agents, industrial developers as well as aboriginal neighbors demonstrates an ability not only to adapt but to flourish in response to external pressures. It must be remembered that culture represents an adaptive process that enables individuals/communities to cope with socio-environmental change. Therefore the concerns that co-operative management arrangement may threaten the cultural integrity of aboriginal communities becomes particularly invalid, and from an anthropological point of view such change is considered quite 'normal' (Hedican 1995: 153).

Summary

The focus of this chapter has been on institutional change brought about by strategies employed by the WFLFN in an effort to alter existing social relationships. These strategies represent sources of empowerment through which the acquisition of knowledge, skills, and economic self-sufficiency can provide a wider range of options for the WFLFN to call upon when dealing with competing populations. The important point to understand is that the adaptive strategies employed by Whitefish Lake are being exercised to affect fundamental change in the institutions that most directly influence Whitefish Lake's involvement with traditionally used lands and resources. Thus in order to understand the evolution of institutional resource management in the Whitefish Lake territory, change must be seen as a continuous and incremental process that makes possible the establishment of new relationships and management approaches that correspond with the evolving needs of resource users. Therefore if a dynamic theory of co-management is to be developed it must be built on a model of incremental institutional change.

The following and concluding chapter therefore addresses the need to arrive at a co-management theory that departs from static evaluations and begins to recognize the temporal and cultural influences that direct institutional change. Thus in order to establish a theory of co-management that contributes to a greater understanding of social change, co-management arrangements must be seen as the deliberate result of strategies used by resource users to redefine social interaction.

9. Conclusion

Introduction

Basic assumptions about human behavior change so gradually that we often only notice them as we reflect on the values practiced by earlier generations (Rochon 1998: 239). Because of this, human adaptation can be more easily understood and applied to a relevant co-management theory if one looks at changes in social behavior as responses to strategies employed by resource users over time (e.g., Barth 1967). This concluding chapter therefore addresses the relevance of a co-management theory that recognizes both temporal and cultural influences in coming to understand institutional change.

Building upon this approach this chapter specifies what changes are required in order to incorporate institutional analysis into a co-management theory. In closing, this chapter offers future research considerations, both theoretical and operational, that will contribute to a general understanding of institutional change and more specifically to how aboriginal communities are using co-management arrangements as an adaptive strategy to influence the social systems that govern their involvement with traditionally used land and resources.

9.1 Time and Development

Foreseeing the restrictions and limitations a treaty would inflict upon their lifestyle, Whitefish Lake representatives were well warranted in their hostility towards entering into an agreement that would have such long lasting political, social, economic and cultural implications on their way of life. While there was no way to have foreseen the pressures (i.e., industrial, economic, cultural) that would result from entering such an arrangement, the signing of Treaty Eight nonetheless set in motion a process that would relinquish Whitefish Lake's control over the landscape that has formed the basis of their economic, spiritual and cultural well-being.

Viewed as little more than obstacles to frontier development, the WFLFN found itself relegated to a reserve system that invalidated any right to lands and resources outside the reserve boundaries. The resulting industrial and regulatory effect on the Whitefish Lake landscape over the past century (and more specifically over the past thirty years) has to a large extent restricted all other forest uses, including the traditional land use patterns of the WFLFN. Thus the deterritorialization and institutional exclusion of the WFLFN effectively removed any challenge Whitefish Lake might pose to the industrialization of their homeland. The residents of Whitefish Lake have therefore found themselves nested within a landscape of competing and dominating interests that fail to recognize the cultural significance of the land in the formation of the WFLFN identity.

Because of the interplay of interests that have come to exist within the same socio-ecological niche, the WFLFN has been forced to pursue an interdependent relationship with competing populations or risk continued marginalization and possible displacement (e.g., Barth 1969). The strategy used to establish this interdependence has been the institutionalization of the social relationships that exist between themselves and competing populations. Accomplished through the Whitefish Lake Co-operative Management Agreement, the reordering of social interaction has not only provided an institutional space to articulate local concerns and involvement in the land management process but has also served as a means of self-empowerment that has the potential to redefine the social relationships that have evolved within this shared geographical landscape. As a result of socio-environmental pressures (i.e., population and resource strain), Whitefish Lake has employed adaptive strategies, in the form of a co-operative management agreement, which have led to the reformation of the social systems that frame Whitefish Lake's involvement with neighboring and competing populations.

9.1 Future Directions in Research

Because of the institutional 'bridge' co-management arrangements have formed between aboriginal communities, governments, and industry, research into these cross-cultural arrangements have taken, and will undoubtedly continue to take, a variety of multidisciplinary forms. However, after reviewing the literature devoted to co-management, I believe that two areas of research continue to require attention. The first is the development of a culturally appropriate means of institutional analysis that takes into account both the temporal and cultural influences that affect social systems over time (i.e., rather than relying on static and culturally laden evaluations of institutional 'success' or 'failure'). Second, because of the cross-cultural role co-management arrangements have assumed, the development of a relevant co-management theory is needed so as to contribute to our general understanding of cultural change.

While the focus of this research has been primarily on the adaptive strategies employed by the WFLFN in their effort to alter existing social relationships, the province too has exercised strategies to deal with the increased demands being placed on Alberta's lands and resources. Thus as it applies to the Whitefish Lake Co-operative Management

Agreement, further research into the strategies and management (behavioral) changes exercised by provincial institutions would be a significant contribution to this analysis and to future co-management research. Each of these research priorities are addressed below.

9.1.1 Institutional Analysis

As addressed in chapter seven, the diversity that exists among resource management regimes represents varying responses to specific problems of coordination among resource users (Young 1982). Because of this diversity, analytical models have been developed (e.g., Pinkerton 1989; Pomeroy 1997) to provide frameworks for analysis which enable comparisons to be made between varying institutional arrangements.[94] According to Pomeroy (1997: 1) these frameworks allow data to be analyzed systematically to allow for generalizations to be made about conditions which promote 'successful' co-management agreements. While these models contribute to a general understanding of the conceptual factors which influence institutional formation they have proven limited, thus far, to account for the temporal and cultural variations that evolve in social systems over time.

In arriving at measures for institutional success, Feeney et al (1990) rely on determinants of ecological sustainability, in that resource use is practiced without compromising the needs of future generations. This is similar to the approach taken by Buck (1989) in that success is measured by a specific resource maintaining ecological sustainability while reducing the traditional user pool as little as possible.[95] However, these criteria, as useful as they are, fail to imply optimal resource use from a cultural perspective.[96] As Bennett (1996: 50) has noted:

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[94] To arrive at a generalized theory of "complete/incomplete co-management systems, Pinkerton (1989) has offered a model consisting of seven criteria for 'success'. The seven criteria for a complete co-management system include local data gathering and analysis; habitat protection; enhancement and long-term planning; broad policy decision making; harvest allocation decisions; logistical harvesting decisions; and the means to enforce regulations.

> ...for scientific purposes it is possible to study the adaptive process [co-management] objectively and without reference to values, for long-range solutions it is necessary to see it as a *normative* - really, moral - process.

Young (1982: 132) has noted that institutional frameworks promulgated formally but largely ignored in practice are common in most social systems. On this basis there is no reason for regarding the realm of co-management as unusual in this respect. Therefore, given the cultural variability found in resource management institutions it is questionable whether the formulation of some generalized criteria for analysis is appropriate (or even possible) given the dynamic nature of these cross-cultural institutions. As Bennett (1996: 18) has further noted:

> ...social systems may be said to be more dynamic than natural systems, since they are governed by human behavior rather than food supply, available energy, breeding habits, or predation. All these factors are present in human systems as well, but they are managed by anticipatory objectives and controls that arise within the social system itself. But the social system is a projection of human behavior and its derivatives, and this makes all the difference.

However, if methods of institutional analysis are to contribute to the development of a co-management theory (and to cultural change in general), co-management must be situated in a temporal and cultural context where existing resource institutions are not seen as a final stage of development but rather as a phase in the perpetual transition of a social system. Although it is tempting to consider resource institutions as static constructs, removed from temporal and cultural influence, such an approach (although simplifying the discussion) fails to consider the transformative nature of social systems over time. Therefore if we are to gain an understanding of the evolution of specific resource management institutions, temporal considerations must be applied to the analysis. As North (1990: 89) has noted:

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[95] Berkes (1996: 102) has noted that with the exception of Smith and Berkes (1991, 1993) there have been very few studies that focus on the performance of the natural resource itself under different property-rights regimes.

[96] Other approaches have included Oakerson's (1986) dual criteria for efficiency - equity; Pomeroy's (1994) model of empowerment; and Titi and Singh's (1994) criteria for livelihood security.

> ...the single most important point about institutional change, which must be grasped if we are to begin to get a handle on the subject, is that institutional change is overwhelmingly incremental.

Thus in order to attain a more comprehensive understanding of how resource management has evolved, institutionalization must be seen as an adaptive and evolving process which responds to the needs of resource users, the means by which those needs are fulfilled, as well as the consequences they are willing to endure (both culturally and environmentally) in their pursuits.

Because culture includes the values and beliefs people maintain about social and ecological relationships (i.e., how they are prioritized and linked to each other and how they affect behavior) the changing and various dimensions of cultural behavior must also be incorporated into an institutional analysis if such an approach is to contribute to a co-management theory (McCay 1996: 123). According to Buck (1989:109) just as all resources cannot be grouped into a single resource type so too are resource institutions culturally variable. Because of this McCay (1996: 123) maintains that if cultural variability is to be incorporated into an institutional analysis it must be able to account for the differing perception of nature, including perception of the 'other' (i.e., are people seen as too greedy or selfish to cooperate), whether they see themselves as significantly affecting the natural world, and how these perceptions affect human behavior. Thus an analysis of institutional change that takes into account both temporal and cultural influences offers an analytical contribution for coming to understand social change, and more specific to this analysis provides insights into the ways in which aboriginal communities (i.e., Whitefish Lake) are adapting to their surrounding socio-natural environments.

Therefore, given the incremental changes that continually affect human behavior (and thus co-management institutions), establishing specific criteria to predetermine the potential 'success' or 'failure' of co-management institutions in some substantive manner has questionable practical value. By recognizing that incremental changes continually influence social systems, future research must therefore consider the temporal and cultural depth of behavioral change (i.e., ethnographic data) as it has come to influence the formation of specific institutions.

9.1.2 Arriving at a Co-Management Theory

The development of a co-management theory has the promise of yielding both integrated understanding and integrated actions for new approaches to resource management (Gunderson et al 1995). However, Berkes (1996: 101) has noted that resource institutions have generally been examined in rather vague ways, more by reiteration than by any practical approach to theory-building. One approach that has, however, proven relevant to the establishment of a co-management theory has been Douglas' (1982) influential *group/grid* model.

Douglas' model is based upon two dimensions of group and grid to describe four types of social environments. Group is defined by Douglas (1982: 191) by the specific claims it makes over its members, including the boundaries it draws around them, the rights it confers on them to use its name and other protections, and the levies and constraints it applies to group members (i.e., clan, organization, or corporation). Thus a group represents a social environment where individual behavior is set within defined institutional boundaries.

Grid is defined as the number and intensity of the rules applied to group members.[97] For instance, a strong grid defines the social boundaries that regulate interaction between members (i.e., gender roles and status), while boundaries found within a weak grid begin to diffuse as classifications weaken - for instance a free market where only contractual agreements apply. Where a weak grid serves as a social dimension the mode of control will undergo continuous and incremental change. Thus according to Douglas (1982: 201) the operative level of analysis occurs when:

> ...excuses are required for individuals and made by them and where moral judgments materialize into pressures from other persons to act in certain ways .... [The] relevant level of analysis is that at which people find it necessary to explain to each other why they behave as they do.

Buck (1989: 111) maintains that if cultural theory is to be applied to resource management, a way must be found to operationalize the group/grid model. In an attempt to do so, Thompson (1984) has built upon Douglas' approach by integrating ecological perspectives and cultural theory to arrive at insights into the potential survival or failure of resource management institutions over time.

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[97] Douglas' (1982) analysis is conducted at the individual rather than the group level.

By incorporating cultural perceptions of nature into Douglas' group/grid model, resource management, as a cultural construct, is recognized as being subject to continuous negotiation (adaptive behavior) and change (Buck 1989: 104). Noting that one of the primary instruments of cultural change is one's perception of nature, Thompson maintains that correlations between cultural behavior and resource institutions can be made. Buck (1989: 101) has similarly noted that:

> Certain ideas of nature are associated with each cultural bias; these ideas of nature are in turn associated with types of resource management institutions. By identifying an actor or group's cultural bias, analysts can explain the success or failure of different management activities.

Thus resource management institutions that correspond with the cultural perception of the resource users are more likely to survive over time. However, those that fail to meet the needs (i.e., cultural perceptions) of resource users will be reconfigured through the application of social or political strategies. It is in this context that the concept of social movements has emerged and has been applied to co-management theory.

As it relates to resource use, Scott (1990) views social movements as a response to institutional failure to respond adequately to the needs and concerns of resource users. In this view social movements are attempts to reconfigure pluralist society through mobilizing local participation in governing institutions (i.e., rather than assuming centralized control of power). This follows Whitt's (1982) class-dialectic model where the biases of social institutions most often favor outcomes beneficial to the dominant class but recognize that, through alliances and social mobilization, outcomes can favor opposing interests resulting in the restructuring of institutional formation. According to Pinkerton

(1993: 35) at the most fundamental level social movements are an attempt to convince society to apply different values and principles than those currently in operation. Thus social movements are generally aimed at stimulating some form of collective action that seeks both to change social behavior and influence political institutions (Rochon 1998: 32).

The relatively recent development of co-management arrangements seems testimony to the ability of social movements to initiate change within social systems. The interest that has been afforded to co-management arrangements by aboriginal peoples, governments, and industry demonstrates basic behavioral changes in resource management. That is, for all the controversy that has been attached to co-management agreements these institutional arrangements were not a matter of debate thirty years ago. Thus social movements have generated new ideas and perspectives among resource users and state managers whose involvement and interaction with each other (i.e., the creation of a group identity) has promoted the development of new cultural values that have effectively reshaped resource management institutions and thus the allocation of resources (Rochon 1998).

Thus in order to contribute to a greater understanding of the evolution of resource management institutions, future research must recognize that the changes that occur within social systems (i.e., resource management regimes) result from a constant process of learning and an evolution of social values that occur from the accumulation of experiences and exposures to new ideas (Rochon 1998: 5). Therefore if cultural theory is to be applied to co-management institutions its value will be demonstrated in showing how incremental change in social behavior can influence the social systems that mediate human behavior. Thus the application of cultural theory in the future analysis of co-management arrangements must take into account not only the success of specific resources under management but also the evolution of behavioral patterns that frame social interaction.

9.1.3 Provincial Government Change

Throughout this research it was noted by both provincial representatives and First Nation leaders that co-operative management agreements can be used as political tools by provincial bureaucrats to appease the demands of First Nations but with little intention of co-operatively working together. Because of this the actual implementation of these agreements often lie in the hands of lower and mid-level managers who may be hesitant to relinquish managerial control (i.e., a required adjustment of social behavior), leading to a breakdown of the entire co-operative management process. However, this has not been the case in the implementation of the Whitefish Lake Agreement. While there have been challenges and obstacles to overcome, the provincial government (at all levels) has demonstrated a willingness to support the institutional development of the Whitefish Lake Agreement and seems thus far to have recognized the benefits of an interdependent relationship with the WFLFN. Thus an area of research that is in need of further consideration is the role that the Alberta provincial government has played throughout the development and implementation of the Whitefish Lake Agreement.[98]

In arriving at a co-operative management process Whitefish Lake has employed a number of strategies in an effort to alter behavior patterns between themselves and government agencies. However, the provincial government, too, has made incremental changes in order to respond to the increasing demands being placed on Alberta's lands and resources. While it may not be to the point that Whitefish Lake would desire, fundamental changes within provincial institutions have nonetheless been made; thus a valuable contribution to this analysis would be an examination of the institutional/behavioral changes taking place within provincial agencies in order to adjust to Alberta's ever changing socio-natural environment.

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[98] The role provincial representatives played in the development and implementation of the Whitefish Lake Agreement is worthy of further analysis. However, such an analysis falls outside the scope of this research which has dealt primarily on the adaptive strategies employed by the WFLFN.

Summary

> Culture is adaptive because, among other things, it is variable and flexible. Variability or, in other words, diversity is the basis for survival and allows communities to cope with [socio-] environmental changes (Begossi 1998: 148).

The growing involvement of the WFLFN in the co-operative management process is testimony to the fact that Whitefish Lake not only desires greater access to traditionally used lands and resources but is also seeking a more equitable role in the management process. The important point to recognize is that Whitefish Lake's involvement in institutional management is a demonstration of the cultural flexibility that has long enabled Whitefish Lake to adapt to external pressures and competing demands for lands and resources.

By employing adaptive strategies, Whitefish Lake has effectively influenced the behavioral patterns of competing populations so as to allow for institutional change to occur. Thus the cultural flexibility of Whitefish Lake has enabled them to maintain their cultural integrity while incorporating the most strategic cultural components from competing populations. This adaptive efficiency has made possible the maintenance of traditional values (i.e., what may seem as a form of a conservation ethic) while integrating new knowledge and strategies (i.e., institutions) that together, have enhanced ecological resilience and their own cultural survival. Thus by borrowing from multiple cultural traditions, Whitefish Lake has developed a richer cultural capital and a wider range of adaptive options to call upon when dealing with competing interests (Begossi 1998: 148). Therefore Whitefish Lake's ability to operate within this nested cultural landscape has not only enhanced their capacity to cope with change, but to initiate change as well.

References Cited

Alexander, Ian and Oren Yiftachel

1997 Sacred Site or Sacred Cow? The Frontier of Urban Racial Struggle in Australia. *In* Fenster, Tovi and Oren Yiftachel (eds.), Progress in Planning: Frontier Development and Indigenous Peoples. Israel: Pergamon Press: 275-289.

Andreatta, Susan L.

1997 Bananas, Are They the Quintessential Health Food? A Global/Local Perspective. *Human Organization*, Vol. 56, No. 4: 437-449.

Andrews, Thomas D., John B. Zoe and Aaron Herter

1998 On Yamozhah's Trail: Dogrib Sacred Sites and the Anthropology of Travel. *In* Oakes, Jill, Rick Riewe, Kathy Kinew and Elaine Maloney (eds.), Sacred Lands: Claims, Conflicts and Resolutions. Canadian Circumpolar Institute, University of Alberta. Edmonton, Alberta: 305-320.

Arnold, A.

1983 Land Use Planning Concerns of Interior Village Corporations. Fairbanks, Alaska: Tanana Chiefs Conference.

Ballantyne, P., P. Brooks, P. Burns, D. Connolly, G. Charles

1976 Aski-Puko - The Land Alone. A Report on the Expected Effects of the Proposed Hydroelectric Installation at Wintego Rapids Upon the Cree of the Peter Ballantyne and Lac La Ronge Bands. Prepared by the Federation of Saskatchewan Indians.

Barth, Fredrik

1969 Ethnic Groups and Boundaries: The Social Organization of Cultural Differences. Little, Brown and Company, Boston, U.S.A.

1967 On the Study of Social Change. *American Anthropologist* Vol. 69, No. 6: 661-669.

1965 Political Leadership Among Swat Pathans. London School of Economic Monograph on Social Anthropology. The Athlone Press, London.

1964 Competition and Symbiosis in Northeast Baluchistan. *Folk* 6: 15-22.

1956 Ecological Relations Among Ethnic Groups in Swat, North Pakistan. *American Anthropologist* Vol. 58: 1079-1089.

Barzun, J. And Henry F. Graff

1992 The Modern Researcher. Harcourt Brace Jovanovich College Publishers, New York, U.S.A.

Bates, Daniel G.

1998 Human Adaptive Strategies: Ecology, Culture and Politics. Toronto: Allyn and Bacon Press.

Batten, Bruce

1997 Co-Management of Marine Mammals: U.S. Fish and Wildlife Service, Alaska Natives Form Alliance to Conserve Walrus, Sea Otter, Polar Bear. United States Fish and Wildlife Service, Anchorage Alaska.

Begossi, Alpina

1998 Resilience and Neo-Traditional Populations: The Caicaras (Atlantic Forest) and Caboclos (Amazon, Brazil). *In* Berkes, Fikret and Carl Folke (eds.), Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience. Cambridge, Cambridge University Press.

Bendickson, Jamie

1991 Co-Management Issues in the Forest Wilderness: A Stewardship Council for Temagami. Canadian Institute for Resource Law.

Bennet, John W.

1996 Human Ecology as Human Behavior: Essays in Environmental and Development Anthropology. Transaction Publishers, New Brunswick, U.S.A..

1976 The Ecological Transition: Cultural Anthropology and Human Adaptation. Pergamon Press, Elmsford, New York.

1969 Northern Plainsmen: Adaptive Strategy and Agrarian Life. Aldine Publishing Company, Chicago, Illinois.

Berardi, Gigi

1998 Application of Participatory Rural Appraisal in Alaska. *Human Organization*, Vol. 57, No. 4: 438- 446.

Berger, Thomas

1977 Northern Frontier, Northern Homeland: A Report of the McKenzie Valley Pipeline Commission. Ottawa: Department of Supply and Services.

Berkes, Fikret

1998 Indigenous Knowledge and Resource Management Systems in the Canadian Sub-Arctic. *In* Berkes, Fikret and Carl Folke (eds.), Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience. Cambridge, Cambridge University Press.

1996 Social Systems, Ecological Systems, and Property Rights. *In* Hanna, Susan S., Carl Folke and Karl-Goran Maler (eds.), Rights to Nature: Ecological, Economic, Cultural, and Political Principles of Institutions for the Environment. Beijer International Institute of Ecological Economics, The Royal Swedish Academy of Science, Stockholm, Sweden, Island Press: 87-110.

1993 Traditional Ecological Knowledge in Perspective. *In* Traditional Ecological Knowledge: Concepts and Cases. Julian T. Inglis (ed.). International Program on Traditional Knowledge and International Development Research Center. Ottawa, Canada: pp. 1-10.

1989 Common Property Resources: Ecology and Community-Based Sustainable Development. Belhaven Press, London, UK.

Berkes, Fikret and Carl Folke (eds.)

1998 Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience. Cambridge, Cambridge University Press.

Berkes, Fikret and Carl Folke

1994 Investing in Cultural Capital for Sustainable Use of Natural Resources. *In* Jansson, AnnMari, Monica Hammer, Carl Folke and Robert Constanza (eds.), Investing In Natural Capital: The Ecological Economics Approach to Sustainability. International Society for Ecological Economics. Washington D.C., Island Press.

Berkes, F., P.J. George, R.J. Preston, R.J. Hughes

1994 Wildlife Harvesting and Sustainable Regional Native Economy in the Hudson and James Bay Lowland, Ontario. *Arctic* Vol. 47, No. 4: 350-360.

Berkes, Fikret, P. George and R.A. Preston

1991 Co-Management: The Evolution in Theory and Practice of the Joint Administration of Living Resources. *Alternatives*, Vol.18, No. 2: 13-17.

Bishop, Charles and T. Morantz (eds.)

1986 Who Owns the Beaver? Northern Algonquian Land Tenure Reconsidered. *Anthropologica*, 28(1-2).

Bloomquist, W.
1992 Dividing the Waters: Governing Groundwater in Southern California. ICS Press, San Francisco.

Boas, Franz
1888 The Central Eskimo. Sixth Annual Report of the Bureau of American Ethnology for the Years 1884-1885. Washington, D.C.: The Smithsonian Institute: 399-669.

Brewer, M.B. and R.M. Schneider
1990 Social Identity and Social Dilemmas: A Double-Edged Sword. *In* Abrams, D. and M.A. Hogg (eds.), Social Identity Theory: Constructive and Critical Advances. Harvester, Wheatsheaf.

Brice - Bennett, C. (ed.)
1977 Our Footprints Are Everywhere. A Report of the Labrador Inuit Land Use and Occupancy Study. Labrador Inuit Association, Nain, Labrador.

Brightman, R.A.
1993 Grateful Prey: Rock Cree Human-Animal Relations. Berkeley: University of California Press.

Brody, Hugh
1981 Maps and Dreams. Vancouver: Douglas and McIntyre.

1977 Permanence and Change Among the Inuit and Settlers of Labrador. *In* Carol Brice-Bennett (ed.), Our Footprints Are Everywhere: Inuit Land Use and Occupancy in Labrador, Ottawa, Labrador Inuit Association: 311-347.

Brokenshaw, David, D.M. Warren and Osward Werner (eds.)
1980 Indigenous Knowledge Systems and Development. Lanham: University Press of America.

Brown, Foster I., Andrea S. Alechandre, Hiromi S.Y. Sassagawa, and Maria A. De Aquino
1995 Empowering Local Communities In Land-Use Management: The Chico Mendes Extractive Reserve, Acre, Brazil. *Cultural Survival Quarterly*, Winter: 54-57.

Brundtland, G.H.
1987 Our Common Future. New York: Oxford University Press.

Buck, Susan J.
1989 Cultural Theory and Management of Common Property Resources. *Human Ecology*, Vol. 17, No. 1: 101-116.

Callicott, J. Baird

1989 In Defense of the Land Ethic: Essays in Environmental Philosophy. State University of New York Press, Albany.

Calliou, George D.

1997 Urban Indians: Reflection on Participation of First Nation Individuals in the Institutions of the Larger Society. *In* Ponting, Rick (ed.), First Nations in Canada: Perspectives on Opportunity, Empowerment, and Self-Determination. Toronto: McGraw-Hill Ryerson Limited: 222-246.

Campbell, Tracy

1996 Aboriginal Co-Management of Natural Resources: Is It Working? *In* Sustainable Forestry Partnerships: Forging a Network of Excellence. Conference Summaries: March 8-19. Edmonton, Alberta, Canada.

Canadian Council of Forest Ministers

1992 Sustainable Forests: A Canadian Commitment. Hull.

Caulfield, R.A.

1997 Greenlanders, Whales and Whaling: Sustainability and Self-Determination. University of New England Press.

1988 The Role of Subsistence Resource Commissions in Managing Alaska's New National Parks. *In* Freeman, M.M.R. and L.N. Carbyn (eds.), Traditional Knowledge and renewable Resource Management in Northern Regions, Edmonton: Boreal Institute for Northern Studies. Occasional Publication No. 23: 55-64.

Chalifoux, Jeff

1998 Kee Tas Kee Now Tribal Council, personal communication, November 17.

Clark, Tony and Maude Barlow

1997 MAI: The Multilateral Agreement on Investment and the Threat to Canadian Sovereignty. Stoddard Press, Toronto, Canada.

Coe, M. and K. Flannery

1964 Microenvironments and Meso-American Prehistory. *Science* 143: 650-654.

Chrisholm M. and D. Smith (eds.)

1990 Shared Space, Divided Space. Unwin Hyman, London.

Cruikshank, Julie

1990 Life Lived Like a Story. Vancouver: University of British Columbia Press.

DeCremer, David and Mark van Vugt

1998 Collective Identity and Cooperation in a Public Goods Dilemma: A Matter of Trust or Self-Efficacy? *Current Research in Social Psychology*, Vol. 3, No. 1: 1-9.

Dene Cultural Institute

1997 Report on Aboriginal Participation in Mining: Increasing Knowledge. Eighth Annual Report, July.

Doubleday, N.C.

1991 Competing Value Systems: Evolution of Norms, State Control and Traditional Ecological Knowledge. Paper presented at the IASCP Common Property Conference, Winnipeg, Manitoba, September.

1989 Co-Management Provisions of the Inuvialuit Final Agreement. *In* Pinkerton, Evelyn (ed.), Co-operative Management of Local Fisheries. Vancouver: University of British Columbia Press: 209-227.

Douglas, Mary

1982 In the Active Voice. Routledge and Kegan Paul, London.

1978 Cultural Bias. Occasional Paper for the Royal Anthropological Institute No. 35. Royal Anthropological Institute, London.

Durkheim, Emile

1964 The Rules of Sociological Method. New York: Free Press of Glencoe.

Dwyer-Smith Cathy

1997 Wendaban Stewardship Authority. *In* Building Sustainable Communities: A Guide to Community Sustainability Initiatives in Ontario. Appendix 1: 3-4.

East, K.

1986 Resource Co-management in Wood Buffalo National Park: The National Park's Perspective. *In* Native Peoples and Renewable Resource Management: Edmonton: Alberta Society of Professional Biologists: 86-95.

Elias, P.

1991 Development of Aboriginal People's Communities. North York, ON.: Captus Press.

Espiritu, Aileen

1997 Aboriginal Nations: Natives in Northwest Siberia and Northern Alberta. *In* Smith, Eric Alden and Joan McCarter (eds.), Contested Arctic: Indigenous Peoples, Industrial States, and the Circumpolar Environment. Seattle: University of Washington Press: 41-67.

Fall, James A. and Molly B.Chythlook

1998 The Round Island Walrus Hunt: Reviving a Cultural Tradition. *Cultural Survival*, Fall: 59-62.

Fast, Helen and Fikret Berkes

1994 Native Land Use, Traditional Knowledge and the Subsistence Economy in the Hudson Bay Bioregion. Natural Resource Institute University of Manitoba.

Feeney, D., F. Berkes, B.J. McCay and J.M. Acheson

1990 The Tragedy of the Commons: Twenty-Two Years Later. *Human Ecology* 18: 1-19.

Feit, Harvey

1988a Self-Management and State-Management: Forms of Knowing and Managing Northern Wildlife. *In* Freeman, M.M.R. and L.N. Carbyn (eds.), Traditional Knowledge and Renewable Resource Management in Northern Regions, Edmonton: Boreal Institute for Northern Studies. Occasional Publication No. 23: 72-91.

1988b Local-Level Resource Management Studies/Projects in the James Bay Region. *In* Cohen, Fay and A.J. Hanson (eds.), Community-Based Resource Management in Canada: An Inventory of Research and Projects. Canadian Commission for UNESCO, Man and the Biosphere Program, Ottawa.

1987 Waswanipi Cree Management of Land and Wildlife: Cree Cultural Ecology Revisited. *In* Cox, Bruce (ed.), Cultural Ecology. Toronto: McClelland and Stewart: 75-91.

1986 James Bay Cree Indian Management and Moral Considerations of Fur Bearers. *In* Native People and Renewable Resource Management. Alberta Society of Professional Biologists: 49-65.

1984 Conflict Arenas in the Management of Renewable Resources in the Canadian North: Perspectives Based on Conflicts and Responses in the James Bay Region, Quebec. *In* National and Regional Interests in the North. Canadian Arctic Resource Committee, Ottawa: 435-468.

1973 The Ethno-Ecology of the Waswanipi Cree: Or How Hunters can Manage Their Resources. *In* Cox, B. (ed.), Cultural Ecology: Readings On Canadian Indians and Eskimos. Toronto: McClelland and Stewart: 115-125.

Fenster, Tovi
1997 Spaces of Citizenship: the Bedouin and Israeli Frontier Development. *In* Fenster, Tovi and Oren Yiftachel (eds.), Progress in Planning: Frontier Development and Indigenous Peoples. Israel: Pergamon Press: 291-305.

Fenster, Tovi and Oren Yiftachel
1997 Conclusion: Frontiers, Planning and Indigenous Peoples: Conflict or Coexistence. *In* Fenster, Tovi and Oren Yiftachel (eds.), Progress in Planning: Frontier Development and Indigenous Peoples. Israel: Pergamon Press: 321-330.

Fienup-Riordan, Ann
1990 Eskimo Essays: Yup'ik Lives and How We See Them. Rutgers University Press.

Firth, Raymond
1955 Some Principles in Social Organization. *Journal of the Royal Anthropological Institute* 85: 1-7.

Folke, Carl, Fikret Berkes and Johan Colding
1998 Ecological Practices and Social Mechanisms for Building Resilience and Sustainability. *In* Berkes, Fikret and Carl Folke (eds.), Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience. Cambridge, Cambridge University Press: 414-436.

Fondahl, Gail
1997a Environmental Degradation and Indigenous Land Claims in Russia's North. *In* Smith, Eric Aldan and Joan McCarter (eds.), Contested Arctic: Indigenous Peoples, Industrial States, and Circumpolar Environments. University of Washington Press: 68-87.

1997b Freezing the Frontier? Territories of Traditional Nature Use in the Russian North. *In* Fenster, Tovi and Oren Yiftachel (eds.), Progress in Planning: Frontier Development and Indigenous Peoples, Vol. 47 (4): 307-318.

Fort McKay First Nation
1994 There Is Still Survival Out There: A Traditional Land Use and Occupancy Study of the Fort McKay First Nation. Alberta, Canada.

Freeman, Milton M.R.
1992 The Nature and Utility of Traditional Ecological Knowledge. *Northern Perspectives*, 20(1): 9-12.

1986 Renewable Resources, Economics and Native Communities. *In* Native Peoples and Renewable Resource Management: Edmonton: Alberta Society of Professional Biologists.

1985 Appeal to Tradition: Different Perspectives on Arctic Wildlife Management. *In* Brosted, Jens (ed.), Native Power, the Quest for Autonomy and Nationhood of Indigenous People. Oslo: Universitetsforlaget AS.: 265-281.

1976 Report, Inuit Land Use and Occupancy Project (3 vols.). Ottawa: Department of Indian Affairs and Northern Development.

Freeman, M.M.R. and Ludwig N. Carbyn (eds.)
1988 Traditional Knowledge and Renewable Resource Management in Northern Regions. Occasional Paper No. 20, Boreal Institute for Northern Studies, Edmonton.

Friesen, G.
1987 The Canadian Prairies: A History. Toronto: University of Toronto Press.

Gallagher, T.J.
1988 Native Participation in Land Management Planning in Alaska. *Arctic* Vol. 41, No. 2: 91-98.

Gamble, Donald J.
1985 Crushing of Cultures: Western Applied Science in Northern Societies. *Arctic* 39(1): 20-23.

Geertz, Clifford
1963 Agricultural Involution: The Process of Ecological Change in Indonesia. Berkeley: University of California.

George, P., F. Berkes, and R.J. Preston
1995 Aboriginal Harvesting in the Moose River Basin: A Historical and Contemporary Analysis. *The Canadian Review of Sociology and Anthropology*, Vol. 31, No. 2: 69-90.

Gibbs, Christopher and Daniel Bromley
1989 Institutional Arrangements for Management of Rural Resources: Common-Property Regimes. *In* Berkes, Fikret (ed.), Common Property Resources: Ecology and Community-Based Sustainable Development. Belhaven Press, London, UK: 22-32.

Government of Australia, Northern Territory
1976 Aboriginal Lands Right Act. Northern Territory, Australia.

Government of New Zealand

1995 Waikato - Tainui Deed of Settlement. Wellington, NZ.: Office of Treaty Settlements, Minister of Justice.

Gramling, Robert and William R. Freudenburg

1996 Environmental Sociology: Toward a Paradigm for the 21st Century. *Sociological Spectrum* 16: 347-370.

Gunderson, Lance H., C.S. Holling, and Stephen S. Light

1995 Barriers and Bridges: A Synthesis. *In* Barriers and Bridges to the Renewal of Ecosystems and Institutions. New York, Columbia University Press.

Gupta, Anil K., Kirit K. Patel, A.R. Paskakia and P.G. Vijaya Sherry Chand

1995 Building Upon Local Creativity and Entrepreneurship in Vulnerable Environments. *In* Singh, Naresh and Vangile Titi (eds.), Empowerment: Towards Sustainable Development. International Institute for Sustainable Development, Winnipeg, Manitoba: 112-137.

Hanna, Susan S., Carl Folke and Karl-Goran Maler

1996 Rights to Nature: Ecological, Economic, Cultural, and Political Principles of Institutions for the Environment. Beijer International Institute of Ecological Economics, The Royal Swedish Academy of Science, Stockholm, Sweden, Island Press.

Hanna, Susan and Svein Jentoff

1996 Human Use of the Natural Environment: An Overview of Social and Economic Dimensions. *In* Hanna, Susan S., Carl Folke and Karl-Goran Maler Rights to Nature: Ecological, Economic, Cultural, and Political Principles of Institutions for the Environment. Beijer International Institute of Ecological Economics, The Royal Swedish Academy of Science, Stockholm, Sweden, Island Press: 35-56.

Hardin, Garret

1968 The Tragedy of the Commons. *Science* 162: 1243-1248.

Hardesty, Donald L.

1972 The Human Ecological Niche. *American Anthropologist* 74: 457-466.

Harvey, D.

1993 Class Relations, Social Justice and the Politics of Difference. *In* Keith M. and S. Pile (eds.), Place and the Politics of Identity. Routledge, London: 41-66.

Heckbert, Mark
1999a Wildlife Biologist, Alberta Environmental Protection, personal communication, March 22.

1999b Outfitter-Guide Allocation and Harvest Data: Wildlife Management Units 544, 542, 520. Alberta Environmental Protection, Natural Resource Division, High Prairie, Alberta.

Hedican, Edward J.
1995 Applied Anthropology in Canada: Understanding Aboriginal Issues. Toronto: University of Toronto Press.

Helm, June
1962 The Ecological Approach in Anthropology. *American Journal of Sociology* 67: 630-639.

Hensel, Chase and Phyllis Morrow
1998 Co-Management and Co-Optation: Alaska Native Participation in Regulatory Processes. *Cultural Survival Quarterly*, Fall: 69-71.

Holling, C.S., Fikret Berkes and Carl Folke
1998 Science, Sustainability and Resource Management. *In* Berkes, Fikret and Carl Folke (eds.), Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience. Cambridge, Cambridge University Press: 342-362.

Honigman, John J.
1983 Adaptations in Canadian Circumpolar Towns. *In* Muller-Wille, L., P. Pelto, Li. Muller-Wille, and R. Darnell (eds.), Consequences of Economic Change in Circumpolar Regions. Boreal Institute for Northern Studies, University of Alberta, Edmonton: 149-162.

Hrenchuk, Carl
1993 Native Land Use and Common Property: Whose Common? *In* Inglis, Julian T. (ed.). Traditional Ecological Knowledge: Concepts and Cases. International Program on Traditional Ecological Knowledge and International Development Research Center. Ottawa, Canada: 69-86.

Hudson's Bay Canadian Archives
1899 D.20 / 69 Correspondence from Round to C.C. Chipman, October 2.

Hull, Peter
1996 Northwest Territory Diamonds Project, Report of the Environmental Assessment Panel. June.

Hunn, Eugene S.

1982 Mobility as a Factor Limiting Resource Use in the Columbia Plateau of North America. *In* Resource Managers: North American and Australian Hunter-Gatherers. Washington D.C.: Australian Institute of Aboriginal Studies: 17-44.

Indian and Northern Affairs Canada

1993 Umbrella Final Agreement Between the Government of Canada, the Council of Yukon Indians, and the Government of the Yukon. INAC: Ottawa.

1993 The BarriEre Lake Trilateral Agreement. INAC: Ottawa.

1992 Gwich'in Comprehensive Lands Claim Agreement. Vol. 1. Ottawa: Queen's Printer.

1992 Xax'lip First Nation - British Columbia Joint Stewardship Agreement. INAC: Ottawa.

1991 Mathias Colomb First nation - Government of Manitoba Moose and Caribou Co-Management Agreement. INAC: Ottawa.

1985 The Western Arctic Claim: The Inuvialuit Final Agreement. Ottawa: Queen's Printers.

1985 The Porcupine Caribou Management Agreement. An Agreement between the Government of Canada, as represented by the Minister of Indian Affairs and Northern Development and the Minister of the Environment, and the Government of the Yukon, as represented by the Minister of Renewable Resources, and the Council of Yukon Indians, and the Inuvialuit Game Council and the Dene Nation and the Metis Association of the Northwest Territory. INAC: Ottawa.

1976 The James Bay and Northern Quebec Final Agreement. Ottawa: Queen's Printers.

Inglis, J.T. (ed.)

1993 Traditional Ecological Knowledge: Concepts and Cases. Ottawa: Canadian Museum of Nature.

Ingold, Tim

1987 The Appropriation of Nature. Iowa City: University of Iowa Press.

IUCN/UNEP/WWF
1991 Caring For the Earth. A Strategy for Sustainable Living. Gland, Switzerland.

Ivanitz, Michele J.
1996 Co-Management of Resources Between Whitefish Lake First Nation and the Province of Alberta: Social Forestry and Local-Global Articulation. Thesis (Ph.D.) University of Alberta, Department of Anthropology: Edmonton, Alberta.

Ives, John W.
1993 The Ten Thousand Years Before The Fur Trade in Northeast Alberta. *In* McCormack, P.A. and R.G. Ironside (eds.), The Uncovered Past: Roots of Northern Alberta Societies. Circumpolar Research Series No. 3.. Canadian Circumpolar Institute, University of Alberta, Edmonton: 5-31.

1982 Evaluating the Effectiveness of Site Discovery Techniques in Boreal Forest Environments. *In* Francis, Peter D. and Eric C. Poplin (eds.), Directions in Archaeology: A Question of Goals. Calgary: Archaeological Association, University of Calgary: 95-114.

Jackson, P. and J. Penrose (eds.)
1993 Construction of Race, Place and Nation. UCL Press, London.

Jansson, AnnMari, Monica Hammer, Carl Folke and Robert Constanza
1994 Investing In Natural Capital: The Ecological Economics Approach to Sustainability. International Society for Ecological Economics. Washington D.C., Island Press.

Jarvis, Keith A. and Allyn MacLean Stearman
1995 Geomatic And Political Empowerment: The Yuqui. *Cultural Survival Quarterly*, Winter: 58-61.

Johannes, R.L.
1989 Traditional Ecological Knowledge: A Collection of Essays. Gland, Switzerland: IUCN, The World Conservation.

Johnson, Martha (ed.)
1992 Lore: Capturing Traditional Environmental Knowledge. Ottawa: Dene Cultural Institute and the International Development Research Centre.

Johnston, Hank and Bert Klandermans (eds.)
1995 Social Movement and Culture. Minneapolis, University of Minnesota Press.

Kee Tas Kee Now Tribal Council
1998 Process for Consultation with the Kee Tas Kee Now Tribal Council. Kee Tas Kee Now Tribal Council, Alberta, Canada.

Keith, Robert F. and David A. Neufeld
1988 Northern Resource Planning and Management Perspectives on Community Self-Determination. *In* Dacks, Gurston and Ken Coates (eds.), Northern Communities: The Prospects for Empowerment. Alberta: Boreal Institute for Northern Studies: 91-100.

Kemp, William B. and Lorraine F. Brooke
1995 Toward Information Self-Sufficiency: The Nunavik Inuit Gather Information on Ecology and Land Use. *Cultural Survival Quarterly*, Winter: 25-28.

Kleinfeld, Judith
1972 Effective Teachers in Indian and Eskimo High School Students. Fairbanks: University of Alaska, Institute of Social, Economic, and Government Research.

Kofinas, Gary
1993 Subsistence Hunting in a Global Economy: Contributions of Northern Wildlife Co-Management to Community Economic Development. Making Waves: A Newsletter for Community Economic Development Practitioners in Canada, Vol. 4 (3), August.

Komorita, S.S. and C.D. Parks
1994 Social Dilemmas. Dubuque, IA: Brown and Benchmark.

Kuhn, Richard G. and Frank Duerden
1996 A Review of Traditional Environmental Knowledge: An Interdisciplinary Canadian Perspective. *Culture* 16(1): 71-84.

Kulchyski, Peter
1998 Bush/Lands: Some Problems of Defining the Sacred. *In* Oakes, Jill, Rick Riewe, Kathy Kinew and Elaine Maloney (eds.), Sacred Lands: Claims, Conflicts and Resolutions. Canadian Circumpolar Institute, University of Alberta. Edmonton, Alberta: 21-24.

Lansing, J.S.
1991 Priests and Programmers: Technology of Power in the Engineered Landscape of Bali. Princeton University Press, Princeton, NJ.

Lane, Marcus and Athol Chase
1996 Resource Development on Cape York Peninsula: Marginalisation and Denial of Indigenous Perspectives. *In* Resources, Nations and Indigenous Peoples. Oxford University Press, Oxford: 172-183.

Leacock, Eleanor B.
1954 The Montagnais "Hunting Territory" and the Fur Trade. Memoir 78. Washington, D.C.: American Anthropological Association.

Lee, R.B.
1976 "!Kung Spatial Organization: an Ecological and Historical Perspective. *In* Lee, R.B. and I. Devore (eds.), Kalahari Hunter-Gatherers. Cambridge, Harvard University Press.

Leonard, David W.
1995 Delayed Frontier: The Peace River Country to 1909. Detselig Enterprises Ltd.. Calgary, Alberta, Canada.

Lester, G.S.
1979 Aboriginal Land Rights: The Significance of Inuit Place Naming. *Inuit Studies* 3(1): 53-76.

Lewis, Henry T.
1988 Traditional Ecological Knowledge: Some Definitions. *In* Williams N.M. and G. Baines (eds.), Traditional Ecological Knowledge: Wisdom for Sustainable Development. Center for Resource and Environmental Studies, Australia National University, Canberra.

1982 Fire Technology and Resource Management in Aboriginal North America and Australia. *In* Resource Managers: North American and Australian Hunter-Gatherers. Washington D.C.: Australian Institute of Aboriginal Studies: 45-68.

Levi-Strauss, C.
1966 The Savage Mind. London: Weidenfall and Nicolson.

Light, S.S., Lance Gunderson and C.S. Holling
1995 The Everglades: Evolution of Management in a Turbulent Ecosystem. *In* Gunderson, Lance, C.S. Holling and Stephen Light (eds.), Barriers and Bridges to the Renewal of Ecosystems and Institutions. New York, Columbia University Press.

Little Bear, Leroy

1998 Aboriginal Relations to the Land and Resources. *In* Oakes, Jill, Rick Riewe, Kathy Kinew and Elaine Maloney (eds.), Sacred Lands: Claims, Conflicts and Resolutions. Canadian Circumpolar Institute, University of Alberta. Edmonton, Alberta: 21-24.

Lloyd, K.

1986 Cooperative Management of Polar Bears on Northeast Baffin Island. *In* Native People and Renewable Resource Management, The 1986 Symposium of the Alberta Society for Professional Biologists. Edmonton: Alberta Society of Professional Biologists: 108-116.

Malinowski, B.

1954 Magic, Science, and Religion. New York: Anchor Books.

Masters, Jack

1997 Wabaseemoong - Ontario Co-Management Agreement. *In* Building Sustainable Communities: A Guide to Community Sustainability Initiatives in Ontario. Appendix 1: 2-3.

McCully, Al and Hugh Seaton

1982 Gift Lake Metis Settlement Land Use Planning Inventory. Municipal Planning Section, Planning Branch Alberta Municipal Affairs.

McCay, Bonnie J.

1996 Common and Private Concerns. *In* Hanna, Susan S., Carl Folke and Karl-Goran Maler (eds.), Rights to Nature: Ecological, Economic, Cultural, and Political Principles of Institutions for the Environment. Beijer International Institute of Ecological Economics, The Royal Swedish Academy of Science, Stockholm, Sweden, Island Press: 111-126.

McCay, B.J. and J.M. Acheson (eds.)

1987 The Question of the Commons: The Culture and Ecology of Communal Resources. Tucson: University of Arizona Press.

McDonald, M. and B. Flemming

1991 The Role of Traditional Knowledge in Community-Based Management of an Eider Industry Developing in Northern Canada. Paper presented at the IASCP Common Property Conference, Winnipeg, Manitoba, September.

McKean, Margaret A.
1996 Common-Property Regimes as a Solution to Problems of Scale and Linkage. *In* Hanna, Susan S., Carl Folke and Karl-Goran Maler (eds.), Rights to Nature: Ecological, Economic, Cultural, and Political Principles of Institutions for the Environment. Beijer International Institute of Ecological Economics, The Royal Swedish Academy of Science, Stockholm, Sweden, Island Press.

Merculieff, Ilarion (Larry)
1994 Western Society's Linear Systems and Aboriginal Cultures: The Need for Two-Way Exchange for the Sake of Survival. *In* Burch, Ernest S. and Linda J. Ellanna (eds.), Key Issues in Hunter-Gatherer Research. Berg Publishers: 405-418.

Messick, D.M. and M.B. Brewer
1983 Solving Social Dilemmas. *In* Wheeler, L. and P.R. Shaver (eds.), Review of Personality and Social Psychology. Beverly Hills: Sage Publications: 11-44.

Miller, J.R.
1991 The Skyscrapers Hide the Heavens: a History of Indian-White Relations in Canada. Toronto: University of Toronto Press.

Moen, Andrea B.
1990 Demystifying Forestry Law: An Alberta Analysis. Edmonton: Environmental Law Centre.

Morell, M.
1989 The Struggle to Integrate Traditional Indian Systems and State Management in the Salmon Fisheries of the Skeena River, British Columbia. *In* Pinkerton, Evelyn (ed.), Co-Operative Management of Local Fisheries. Vancouver, University of British Columbia Press: 231-248.

Morphy, H.
1993 Colonialism, History and Construction of Place: The Politics of Landscape in Northern Australia. *In* Bender, B. (ed.), Landscape: Politics and Perspectives. Oxford, Berg Publishers Ltd.: 205-243.

Morris, Aldon D. and Carol McClurg Mueller (eds.)
1992 Frontiers in Social Movement Theory. New Haven, Yale University Press.

Nakashima, Douglas, J.

1993 Astute Observers on the Sea Ice Edge: Inuit Knowledge as a Basis for Arctic Co-Management. *In* Inglis, Julian T. (ed.), Traditional Ecological Knowledge: Concepts and Cases. International Program on Traditional Ecological Knowledge and International Development Research Center. Ottawa, Canada: pp. 99-110.

1990 Application of Native Knowledge in EIA: Inuit, Eiders and Hudson Bay Oil. Ottawa: Canadian Environmental Assessment Research Council.

National Archives of Canada

1899 RG10 Vol. 3484 file 75236-1.

Natural Resources Canada

1996 The State of Canada's Forests: Learning From History. Canadian Forest Service, Ottawa, Canada.

Nelson, Richard K.

1983a The Athabaskans: People of the Boreal Forest. Fairbanks, Alaska. Alaska Historical Commission Studies in History, No. 27.

1983b Make Prayers To The Raven: A Koyukon View of the Northern Forest. Chicago, Illinois. University of Chicago Press.

1982 A Conservation Ethic and Environment: The Koyukon of Alaska. *In* Williams, Nancy M. and Eugene S. Hunn (eds.), Resource Managers: North American and Australian Hunter - Gatherers. Washington D.C.: Australian Institute of Aboriginal Studies: 211-228.

1980 Shadow Of The Hunter: Stories of Eskimo Life. Chicago, Illinois, University of Chicago Press.

1977 Subsistence In Future Alaskan Parklands: An Overview. Fairbanks, Alaska, University of Alaska Press.

1973 Hunters Of The Northern Forest: Designs for Survival Among the Alaskan Kutchin. Chicago, Illinois. University of Chicago Press.

Nelson, Richard K. and Kathleen H. Mautner and G. Ray Bane

1982 Tracks Through The Wildland: A Portrayal of Koyukon and Nunamiut Subsistence. Fairbanks, Alaska. Anthropology and Historic Preservation Cooperative Park Studies Unit, University of Alaska, Fairbanks.

Netting, R.M.
1981 Balancing on an Alp: Ecological Change and Continuity in a Swiss Mountain Community, Cambridge, Cambridge University Press.

Nietschmann, Bernard
1995 Defending The Miskito Reefs With Maps and GPS: Mapping With Sail, Scuba, and Satellite. *Cultural Survival Quarterly*. Winter: 34-37.

North, Douglass C.
1990 Institutions, Institutional Change and Economic Performance. Cambridge, Cambridge University Press.

Northern Moose Management Program Progress Report (NMMPPR)
1998 Northern Moose Management Program Progress Report (NMMPPR). Alberta Environmental Protection, Natural Resource Service. Edmonton, Alberta.

Notzke, Claudia
1994 Aboriginal Peoples and Natural Resources in Canada. York: Captus University Publications.

1993 The Barriere Lake Trilateral Agreement. Barriere Lake Indian Government.

Nuttall, Mark
1992 Arctic Homeland: Kinship, Community, and Development in Northwest Greenland. Toronto: University of Toronto Press.

Oakerson, R.J.
1986 A Model for the Analysis of Common-Property Problems. *In* Proceedings of the Conference on Common-Property Resource Management. National Academy Press, Washington, D.C.: 13-29.

Oakes, Jill, Rich Riewe, Kathi Kinew and Elaine Maloney (eds.)
1998 Sacred Lands: Aboriginal Worldviews, Claims, and Conflicts. Canadian Circumpolar Institute, University of Alberta, Edmonton, Alberta.

Odum, E.
1959 Fundamentals of Ecology. 2nd Edition. Philadelphia: Saunders.

Osherenko, Gail
1988 Wildlife Management in the North American Arctic: The Case for Co-management. *In* Freeman, Milton M.R. and Ludwig N. Carbyn (eds.), Traditional Knowledge and Renewable Resource Management. Edmonton: IUCN and the Boreal Institute for Northern Studies: 92-104.

Ostrom, Elinor

1998 A Behavioral Approach to the Rational Choice Theory of Collective Action Presidential Address, American Political Science Association. *American Political Science Review*, Vol. 92, No. 1: 1-21.

1992 Community and the Endogenous Solution of Commons Problems. *Journal of Theoretical Politics*, 4(3): 343-351.

1990 Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge, Cambridge University Press.

Petch, Virginia

1998 Impact Assessment and Sacred Sites: Convincing the Proponent. *In* Oakes, Jill, Rick Riewe, Kathy Kinew and Elaine Maloney (eds.), Sacred Lands: Claims, Conflicts and Resolutions. Canadian Circumpolar Institute, University of Alberta. Edmonton, Alberta: 189-196.

Peter, Albert, and Doug Urquhart

1994 Co-management of the Porcupine Caribou Herd. *Rangifer*, Special Issue No. 9: 273-276.

Pinkerton, Evelyn

1998 Integrated Management of a Temperate Montane Forest Ecosystem Through Wholistic Forestry: A British Columbia Example. *In* Fikret Berkes and Carl Folke (eds.), Linking Social and Ecological Systems: Management Practices and Social Mechanisms for Building Resilience. Cambridge, Cambridge University Press.

1993 Co-Management Efforts as Social Movements. *Alternatives*, 19(3): 34-38.

1992 Translating Legal Rights Into Management Practice: Overcoming the Barriers to the Exercise of Co-Management. *Human Organization*, 51(4): 330-341.

1989 Co-operative Management of Local Fisheries. Vancouver, University of British Columbia Press.

Pinkerton, E. and M. Weinstein

1995 Fisheries at Work: Sustainability Through Community-Based Management. A Report to the David Suzuki Foundation, No. 219, 2211 West Forth Avenue, Vancouver, BC.

Planning Committee for the Co-Management of Southeast Baffin Beluga

1994 Co-Management Plan for Southeast Baffin Beluga. Prepared for the Minister of Fisheries and Oceans.

Pomeroy, Robert

1997 Analysis of Fisheries Co-Management Arrangements: A Research Framework. Prepared by Fisheries Co-management Project Core Staff at the International Center for Living Aquatic Resources Management and North Sea Center.

1994 Community Management and Common-Property of Coastal Fisheries in Asia and the Pacific. ICLARM, Manila.

Ponting, Rick

1997 The Socio-Demographic Picture. *In* Ponting, Rick (ed.), First Nations in Canada: Perspectives on Opportunity, Empowerment, and Self-Determination. Toronto: McGraw-Hill Ryerson Limited: 68-115.

Pratt, L. and I. Urquhart

1995 The Last Great Forest. Edmonton, NuWest.

Provincial Archives of Alberta

1899 281/149 Letters from Holmes to Bishop Young, June 3.

Prystupa, Mark V.

1998 Barriers and Strategies to the Development of Co-Management Regimes in New Zealand: The Case of Te Waihora. *Human Organization* 57(2): 134-144.

Rappaport, R.A.

1967 Pigs for the Ancestors: Ritual in the Ecology of a New Guinea People. New Haven, Yale University Press.

Redfield, Robert

1957 The Primitive World and its Transformations. Ithica, Cornell University Press.

Richardson, M. and B. Green

1989 The Fisheries Co-management Initiative in Haida Gwaii. *In* Pinkerton, Evelyn (ed.), Co-operative Management of Local Fisheries. Vancouver: University of British Columbia Press: 249-261.

Rochon, Thomas R.

1998 Culture Moves: Ideas, Activism, and Changing Values. Princeton University Press, Princeton, New Jersey.

Rogers, Edward S.
1963 The Hunting Group Territory Complex Among the Mistassini Indians. National Museum of Canada Bulletin 195, Anthropological Series 63. Ottawa: National Museum of Canada.

Ross, Monique
1996 Forest Tenures and Resource Rights Allocation: Management for Multiple or Dominant Use. *In* Sustainable Forestry Partnerships: Forging a Network of Excellence, Conference Summaries. Edmonton, Alberta.

Royal Commission on Aboriginal Peoples
1996 Restructuring the Relationships. Ottawa: Minister of Supply and Services Canada, Vol. 2.

Schon, D.A.
1971 Beyond the Stable State. New York: W.W. Norton.

Scollon, R. and S. Scollon
1981 Narrative, Literacy and Face in Interethnic Communication. Norwood, New Jersey: Ablex Publishing.

1980 Interethnic Communication. Fairbanks, University of Alaska, Native Language Center.

Scott, Alan
1990 Ideology and the New Social Movements. London: Unwyn Hyman.

Sefa Dei, George J.
1995 Indigenous Knowledge as an Empowerment Tool for Sustainable Development. *In* Singh, Naresh and Vangile Titi (eds.), Empowerment: Towards Sustainable Development. International Institute for Sustainable Development, Winnipeg, Manitoba: 147-161.

Seleh, Mohammed Abdullah Eben
1998 Planning for Conservation: The Management of the Vernacular Landscape in Asir Region, Southwest Saudi Arabia. *Human Organization* 57(2): 171-180.

Singh, Naresh and Vangile Titi
1995 Empowerment for Sustainable Development: An Overview. *In* Singh, Naresh and Vangile Titi (eds.), Empowerment: Towards Sustainable Development. International Institute for Sustainable Development, Winnipeg, Manitoba: 6-28.

Singleton, Sara and Michael Taylor
1992 Common Property, Collective Action and Community. *Journal of Theoretical Politics*, Vol. 4, No. 3: 309-324.

Smith, A.H. and F. Berkes
1993 Community-Based Use of Mangrove Resources in St. Lucia. *International Journal of Environmental Studies,* 43: 123-131.

1991 Solutions to the "Tragedy of the Commons": Sea-Urchin Management in St. Lucia, West Indies. *Environmental Conservation*, 18: 131-136.

Smith, James
1978 Western Woods Cree. *In* W.C. Sturtevant (ed.), Handbook of North American Indians: Subarctic (16): 256-270.

Smith, R.J.
1981 Resolving the Tragedy of the Commons by Creating Private Property Rights in Wildlife. *CATO Journal* (1): 439-468.

Speck, Frank G.
1915 The Family Hunting Band as the Basis of Algonquian Social Organization. *American Anthropologist* 17: 289-305.

Steegmann, Theodore (ed.)
1983 Boreal Forest Adaptations: The Northern Alqonkians. New York: Plenum Press.

Stevenson, Marc
1998 Traditional Knowledge and Environmental Management: Moving From Commodity to Process. Paper presented to the National Aboriginal Forestry Association Conference, "Celebrating Partnerships", Prince Albert, Saskatchewan, September 14-18.

1997 Inuit and Co-Management: Principles, Practices and Challenges for the Millennium. Paper presented at the NAMMCO International Conference, "Sealing the Future", St. John's, Newfoundland, 25-27 November.

1996 Indigenous Knowledge in Environmental Assessment. *Arctic* 49(3): 278-291.

Steward, Julian
1955 Theory of Culture Change: The Methodology of Multilinear Evolution. Urbana, Illinois.

Sub-Committee of the Intergovernmental Working Group on the Mineral Industry
1997 Report on Aboriginal Participation in Mining: Increasing Knowledge. Eighth Annual Report, July.

Svensson, Tom G.
1983 The Effects of Economic Changes on the Ecology, Culture and Politics of Reindeer Samis in Sweden. *In* L. Muller-Wille, P. Pelto, Li. Muller-Wille, and R. Darnell (eds.), Consequences of Economic Change in Circumpolar Regions. Boreal Institute For northern Studies, University of Alberta, Edmonton: 215-234.

Szymanski, Marcella, Lisa Whitewing and Joe Colletti
1998 The Use of Participatory Rural Appraisal Methodologies to Link Indigenous Knowledge and Land Use Decisions Among the Winnebago Tribe of Nebraska. *Indigenous Knowledge and Development Monitor* 6(2): 7-14.

Tanner, Adrian
1986 The New Hunting Territory Debate: An Introduction to Some Unresolved Issues. *Anthropologica* 28: 19-35.

1979 Bringing Home Animals: Religious Ideology and Mode of Production of the Mistissini Cree Hunters. Institute of Social and Economic Research Memorial University of Newfoundland.

1973 The Significance of Hunting Territories Today. *In* Cox, Bruce (ed.), Cultural Ecology: Readings on Canadian Indians and Eskimos, Toronto: McClelland and Stewart.

Taylor, P.
1995 Beyond Containers: Internationalism, Interstateness and Interterritorality. *Human Geography* 19(1): 1-15.

Taylor, S.
1969 Cognitive Anthropology. New York: Holt, Rinehart and Winston.

Thompson, M.
1984 The Cultural Construction of Nature and the Natural Destruction of Culture. International Institute for Applied Systems Analysis, Laxenberg, Austria.

1983 A Cultural Bias for Comparison. *In* Kunrenther, H.C. and J. Linnerooth (eds.), Risk Analysis and Decision Processes: The Sitting of Liquefied Energy Gas Facilities in Four Countries. Springer, Berlin: 232-262.

Titi, V, and N. Singh
1994 Adaptive Strategies of the Poor in Arid and Semi-arid Lands: In Search of Sustainable Livelihoods. International Institute of Sustainable Development, Winnipeg.

Tobias, Terry
1993 Stereotyped Village Economies and the Pinehouse Harvest Research. *In* Inglis, J.T. (ed.), Traditional Ecological Knowledge: Concepts and Cases. International Program of Traditional Ecological Knowledge and International Development Research Centre. Ottawa: Canada: 87-98.

Tolko Industries LTD.
1997 Tolko Preliminary Forest Management Plan. Tolko Industries LTD., High Prairie, Alberta.

True, June Autrey
1989 Finding Out: Conducting and Evaluating Social Research. Wadworth Publishing, Belmont, California.

Uphoff, Norman
1986 Local Institutional Development: An Analytical Source Book with Cases. West Hartford, Connecticut, Kumarian Press.

Usher, Peter J.
1990 Recent and Current Land Use and Occupancy in the Northwest Territories by Chipewyan and Dene' Bands. Office of the Prince Albert Tribal Council. Saskatchewan, Canada.

1986 The Devolution of Wildlife Management and the Prospects for Wildlife Conservation in the Northwest Territories. Ottawa: Canadian Resources Committee, Policy Paper No. 3.

1976 Evaluating County Food in the Northern Native Economy. *Arctic* 29 (2): 105-120.

Usher, Peter and G. Wenzel
1987 Native Harvest Surveys and Statistics: A Critique of Their Construction and Use. *Arctic* 40(2): 145-160.

Usher, Peter, F.J. Tough, and R.M. Galois
1992 Reclaiming the Land: Aboriginal Title, Treaty Rights and Land Claims in Canada. *Applied Geography* 12: 109-132.

Usher, Peter J. and N.D. Banks
1986 Property, The Basis Of Inuit Hunting Rights - A New Approach. Inuit Committee on National Issues, Ottawa.

Weinstein, Martin S.
1993 Aboriginal Land Use and Occupancy Studies in Canada. Workshop on Spatial Aspects of Social of Social Forestry Systems. Chiang Mai University, Chiang Mai, Thailand.

1976 What the Land Provides: An Examination of the Fort George Subsistence Economy and the Possible Consequences on it by the James Bay Hydroelectric Project. Montreal: Grand Council of the Crees (of Quebec).

Wenzel, George
1991 Animal Rights Human Rights: Ecology, Economy and Ideology in the Canadian Arctic. University of Toronto Press.

Westworth, D.A. and Associates Ltd.
1990 Significant Natural Features of the Eastern Boreal Forest Region of Alberta. Technical Report, Alberta Forestry, Lands and Wildlife. Edmonton, Alberta.

Whitt, Allen J.
1982 The Pluralist, Elitist and Dialectic Models. *In* Urban Elites and Mass Transportation. Princeton: Princeton University Press: 8-32.

Wolfe, Jackie, Chris Bechard, Peter Cizek, and David Cole
1992 Indigenous and Western Knowledge and Resources Management System. First Nations Series , University of Guelph, Ontario.

Wolfe, Robert J. and Robert J. Walker
1987 Subsistence Economies In Alaska: Productivity, Geography, and Development Impacts. *Arctic Anthropology*. Vol. 24, No. 2: 56-81.

Yiftachel, Oren and Tovi Fenster
1997 Introduction: Frontiers, Planning and Indigenous Peoples. *In* Fenster, Tovi and Oren Yiftachel (eds.), Progress in Planning: Frontier Development and Indigenous Peoples. Israel: Pergamon Press: 253-258.

Young, Oran
1982 Resource Regimes: Natural Resources and Social Institutions. University of California Press. Los Angeles, California.

Appendix A

Treaty Number 8

ARTICLES OF A TREATY made and concluded at the several dates mentioned therein, in the year of Our Lord one thousand eight hundred and ninety-nine, between Her most Gracious Majesty the Queen of Great Britain and Ireland, by Her Commissioners the Honourable David Laird, of Winnipeg, Manitoba, Indian Commissioners for the said Province and the Northwest Territories; James Andrew Joseph McKenna, of Ottawa, Ontario, Esquire, and the Honourable James Hamilton Ross, of Regina, in the Northwest Territories, of the part; and the Cree, Beaver, Chipewyan and other Indians, inhabitants of the territory within the limits hereinafter defined and described, by their Chiefs and Headmen, hereunto subscribed, of the other part.

WHEREAS, the Indians inhabiting the territory hereinafter defined have, pursuant to notice given by the Honourable Superintendent General of Indian Affairs in the year 1898, been convened to meet a Commission in this year 1899, to deliberate upon certain matters of interest of Her Most Gracious Majesty, of the one part, and the said Indian of the other.

AND WHEREAS, the said Indians have been notified and informed by Her Majesty's said Commission that it is Her desire to open for settlement, immigration, trade, travel, mining, lumbering and such other purposes as to Her Majesty may seem meet, a tract of country bounded and described as hereinafter mentioned, and to obtain the consent thereto of Her Indian subjects inhabiting the said tract, and to make a treaty, and arrangement with them, so that there may be peace and good will between them and Her Majesty's other subject, and that Her Indian people may know and be assured of what allowances they are to count upon and receive from Her majesty's bounty and benevolence.

AND WHEREAS, the Indians of the said tract, duly convene in council at the respective points named hereunder. and being requested by Her Majesty's Commissioners to name certain Chiefs and Headmen who should be authorized on their behalf to conduct such negotiations and sign any treaty to be found thereon, and to become responsible to Her Majesty for the faithful performance by their respective bands of such obligations as shall be assumed by them, the said Indians have therefore acknowledged for that purpose the several Chiefs and Headmen who subscribed hereto.

AND WHEREAS, the said Commissioners have proceeded to negotiate a treaty with the Cree, Beaver, Chipewyin and other Indians, inhabiting the district hereinafter defined and described, and the same has been agreed upon and concluded by the respective bands at the dates mentioned hereunder, the said Indians DO HEREBY CEDE, RELEASE, SURRENDER AND YIELD UP to the Government of the Dominion of Canada, for Her Majesty the Queen and Her successors for ever, all their rights, titles and privileges whatsoever, to the lands included within the following lists, that is to say:

Commencing at the source of the main branch of the Red Deer River in Alberta , thence due west to the central range of the Rocky Mountains. thence northwesterly along the said range to the point where it intersects the 60th parallel of north latitude, thence east along said parallel to the point where it intersects Hay River, thence northeasterly down said river to the south shore of Great Slave Lake, thence along the said shore northeasterly (and including such rights to the islands in the said lake as the Indians mentioned in the treaty may possess), and thence easterly and northeasterly along the southshores of Christie's Bay and McLeod's Bay to Old Fort Reliance near the mouth of Lockhart's River, thence southeasterly in a straight line to and including Black Lake, thence southwesterly up the stream from Cree Lake, thence including said lake southwesterly along the height of land between the Athabasca and Churchill Rivers to where it intersects the northern boundary of Treaty Six, and along the said boundary easterly, northerly and southwesterly, to the place of commencement.

TO HAVE AND TO HOLD the same to Her Majesty the Queen and Her successors for ever.

And Her Majesty the Queen Hereby Agrees with the said Indians that they shall have rights to pursue their usual vocations of hunting, trapping and fishing throughout the tract surrendered as heretofore described, subject to such regulations as may from time to time be made by the Government of the country, acting under the authority of Her majesty, and saving and excepting such tracts as may be required or taken up from time for settlement, mining, lumbering, trading or other purposes.

And Her Majesty the Queen hereby agrees and undertakes to lay aside reserves for such bands as desire reserves, the same not to exceed in all one square mile for each family of five for such number of families as may elect to reside on reserves, or in that proportion for larger or smaller families; and for such families or individual Indians as may prefer to live apart from band reserves, Her Majesty undertakes to provide land in severalty to the extent of 160 acres to each Indian, the land to be conveyed with a proviso as to non-alienation without consent of the Governor General in Council of Canada, the selection of such reserves, and lands in severalty, to be made in the manner following, namely, the Superintendent General of Indian Affairs shall depute and send a suitable person to determine a set apart such reserves and lands, after consulting with the Indians concerned as to the locality which may be found suitable and open for selection.

Provided, however, that Her majesty reserves the right to deal with any settlers within the bounds of any lands reserved for any band as She may see fit; and also that the foresaid reserves of land, or any interest therein, may be sold or otherwise disposed of by Her Majesty's Government for the use and benefit of the said Indians entitled thereto, with their consent first had and obtained.

It is further agreed between Her Majesty and Her said Indian subjects that such portions of the reserves and lands above indicated as may at any time be required for public works, buildings, railways, or roads of whatsoever nature may be appropriated for that purpose by Her Majesty's Government of the Dominion of Canada, due compensation being made to the Indians for the value of any improvements thereon, and an equivalent in land, money or other consideration for the area of the reserve so appropriated.

And with a view to show the satisfaction of Her Majesty with the behaviour and good conduct of Her Indians, and in extinguishment of all past claims, She hereby, through Her Commissioners, agrees to make each Chief a present of thirty-two dollars in cash, to each Headman twenty-two dollars, and to every other Indian of whatever age, of the families represented at the time and place of payment, twelve dollars.

Her Majesty also agrees that next year, and annually afterwards for ever, She will cause to be paid to the said Indians in cash, at suitable places and dates, of which the said Indians shall be duly notified, to each Chief twenty-five dollars, each Headman, not to exceed four to a large Band and two to a small Band, fifteen dollars, and to every other Indian, of whatever age, five dollars, the same unless there be some exceptional reason, to be paid only to heads of families for those belonging thereto.

FURTHER, Her Majesty agrees that each Chief, after signing the treaty, shall receive a silver medal and a suitable flag, and next year, and every third year thereafter, each Chief and Headman shall receive a suitable suit of clothing.

FURTHER, Her Majesty agrees to pay the salaries of such teachers to instruct the children of said Indians as to Her Majesty's Government of Canada may seem advisable.

FURTHER, Her Majesty agrees to supply each Chief of a band that selects a reserve, for the use of that band, ten axes, five handsaws, five augers, one grindstone, and the necessary files and whetstones.

FURTHER, Her Majesty agrees that each Band that elects to take a reserve and cultivate the soil, shall, as soon as convenient after such reserve is set aside and settled upon, and the Band has signified its choice and is prepared to break up the soil, receive two hoes, one spade, one scythe and two hay forks for every family so settled, and for every three families one plough and one harrow, and to the Chief, for the use of his Band, two horses or a yoke of oxen, and for each Band potatoes, barley, oats and wheat (if such seed be suited to the locality of the reserve), to plant the land actually broken up, and provisions for one month the spring for several years while planting such seeds; and to every family one cow, and every Chief one bull, and one mowing-machine and one reaper for the use of his Band when it is ready for them; for such families as prefer to raise stock instead of cultivating the soil, every family of five persons, two cows, and every Chief two bulls and two mowing-machines when ready for their use, and a like proportion for smaller and larger families. The aforesaid articles, and for such Bands as prefer to continue hunting and fishing, as much ammunition and twine for making nets as will amount in value to one dollar per head of the families so engaged in hunting and fishing.

And the undersigned Cree, Beaver, Chipewyan and other Indian Chiefs and Headmen, on their own behalf and on behalf of all the Indians whom they represent, DO HEREBY SOLEMNLY PROMISE and engage to strictly observe this treaty, and also to conduct and behave themselves as good and loyal subjects of Her Majesty the Queen.

THEY PROMISE AND ENGAGE that they will, in all respects, obey and abide by the law; that they will maintain peace between each other, and between themselves and other tribes of Indians, and between themselves and others of Her Majesty's subjects, whether Indians, half-breeds or whites, this year inhabiting and hereafter to inhibit any part of the said ceded territory; and that will not molest the person or property of any inhabitant of such ceded tract, or of any other district or country, or interfere with or trouble any person passing or traveling through the said tract or any part thereof, and that they will assist the officers of Her Majesty in bringing to justice and punishment any Indian offending against the stipulations of this Treaty or infringing the law in force in the country so ceded.

IN WITNESS WHEREOF Her Majesty's said Commissioner and the Cree Chief and Headmen of Lesser Slave Lake and the adjacent territory, HAVE HEREUNTO SET THEIR HANDS at Lesser Slave Lake on the twenty-first day of June, in the year herein first above written.

Signed by the parties hereto, in the presence of the undersigned witnesses, the same having been first explained to the Indians by Albert Tate and Samuel Cunningham, Interpreters

Father A. LACOMBE,
GOE, HOLMES,
E. GROUARD, O.M.I.
W.G. WHITE,
JAMES WALKER,
J. ARTHUR COTE,
A.E. SNYDER, Insp. N.W.M.P.,
H.B. ROUND,
HARRISON S. YOUNG,
J.F. PRUD'HOMME,
J.W. MARTIN,
C. MAIR,
H.A. CONROY,
PIERRE DESCHAMBEAULT,
J.H. PICARD,
RICHARD SECORD,
M. McCAULEY

DAVID LAIRD, *Treaty Commissioner*
J.A.J. McKENNA, *Treaty Commissioner*
J.H. ROSS, *Treaty Commissioner*

KEE NOO SHAY OO x *Chief,*

MOOSTOOS x *Headman,*

FELIX GIROUX x *Headman*

WEE CHEE WAY SIS x *Headman*

CHARLES NEE SUE TA SIS x *Headman*

CAPTAIN x *Headman, From Sturgeon Lake*

In witness whereof the Chairman of Her Majesty's Commissioners and the Headman of the Indians of Peace River Landing and the adjacent territory, in behalf of himself and the Indians whom the represents, have hereunto set hands at the said Peace River Landing on the first day of July in the year of our Lord one thousand eight hundred and ninety-nine.

Signed by the parties hereto, in the presence of the undersigned witnesses, the same have been first explained to the Indians by Father A. Lacombe and John Boucher, Interpreters.

DAVID LAIRD, *Chairman of Indian Treaty Commissioners,*

DUNCAN x TASTAOOSTS, *Headman of Crees*

Father A. LACOMBE,
E. GROUARD, O.M.I, Ev. d'Ibora,
GEO. HOLMES,
HENRY McCORRISTER,
K.F. ANDERSON, SGT., N.W.M.P.,
PIERRE DESCHAMBEAULT,
H.A. CONROY,
T.A. BRICK,
HARRISON S. YOUNG,
J.W. MARTIN,
DAVID CURRY.

In witness whereof the Chairman of Her Majesty's Commissioners and the Chief and Headmen of the Beaver and Headmen of the Crees and other Indians of Vermilion and the adjacent territory, in behalf of themselves and the Indians whom the represent, have hereunto set their hands at Vermilion on the eighth day of July, the year of our Lord one thousand eight hundred and ninety-nine.

Signed by the parties hereto, in the presence of the undersigned witnesses, the same have been first explained to the Indians by Father A. Lacombe and John Boucher, Interpreters.

DAVID LAIRD, *Chairman of Indian Treaty Commissioners,*
ANBROSE x TETE NOIRE, *Chief Beaver Indians*
PIERROT x FOURNIER, *Headman Beaver Indians*
KUIS KUIS KOW CA POOHOO x *Cree Indians*

Father A. LACOMBE,
E. GROUARD, O.M.I, Ev. d'Ibora,
MALCOLM SCOTT,
F.D. WILSON, H.B. Co.,
H.A. CONROY,
PIERRE DESCHAMBEAULT,

HARRISON S. YOUNG,
J.W. MARTIN,
K.F. ANDERSON, SGT., N.W.M.P.,
A.P. CLARKE,
CHAS. H. STUART WADE,

In witness whereof the Chairman of Her Majesty's Treaty Commissioners and the Chief and Headman of the Chipewyan Indians of Fond du Lac (Lake Athabasca) and the adjacent territory, in behalf of themselves and the Indians whom they represent, have hereunto set their hands at the said Fond du Lac on the twenty-fifth and twenty-seventh days of July, in the year of Our Lord one thousand eight hundred and ninety-nine.

Signed by the parties hereto in the presence of the undersigned witnessess, the same having been first explained by Pierre Deschambeault, Reverend father Douceur and Louis Robillard, Interpreters.

David Laird,
Chairman of the Indian Treaty Com.
Laurent x Drieddin, *Headman*

Toussaint x *Headman*

(The number accepting treaty being larger that at first expected, a Chief was allowed, who signed the treaty on the 27th July before the same witnesses to signatures of the Commissioner and Headman on the 25th.).

G. Breynat, O.M.I.,
Harrison S. Young,
Pierre Deschambeault,
William Henry Burke,
Bathurst F. Cooper,
Germain Mercredi,
his
Louis x Robillard,
K.F. Anderson, Sgt., N.W.M.P.

Maurice x Piche, *Chief of Band*

Witness, H.S. Young

The Beaver Indians of Dunvegan having met on the sixth day of July, in the present year 1899, Her Majesty's Commissioners, the Honourable Hamilton Ross and James Andrew Joseph McKenna, Esquire, and having explained to them the terms of the Treaty unto which the Chief and Headmen of the Indians of Lesser Slave Lake and adjacent country set their hands on the twenty-first day of June, in the year herein above written, do join on the cession made by the said Treaty, and agree to adhere to the terms thereof in consideration of the undertakings made therein.

In witness whereof Her Majesty's said Commissioners and the Headman of the Beaver Indians have hereunto set their hands at Dunvegan on this sixth day of July, in the year herein above written.

Signed by the parties thereto in the
presence of the undersigned witnesses,
after the same had been read and
explained to the Indians by the Reverend
Joseph le Treste and Peter Gunn,
Interpreters.

J.H. Ross, *Commissioner*
J.A.J. McKenna, *Commissioner*
Natooses x *Headman*

A.E. Snyder, Insp. N.W.M.P.,
J. Le Treste,
Peter Gunn,
F.J. Fitzgerald.

The Chipewyan Indians of the Athabasca River, Birch River, Peace River, Slave River and Gull River, and the Cree Indians of Gull River and Deep Lake, having met at Fort Chipewyan on this thirteenth day of July, in the present year of 1899, Her Majesty's Commissioners, the Honourable James Hamilton Ross and James Andrew Joseph McKenna, Esquire, and having explained to them the terms of the Treaty unto which the Chief and Headmen of the Indians of Lesser Slave Lake and adjacent country set their hands on the twenty-first day of June, in the year herein first above written, do join in the cession made by the said Treaty, and agree to adhere to the terms thereof in consideration of the undertakings made therein.

In witness whereof her Majesty's said Commissioners and the Chiefs and Headmen of the said Chipewyan and Cree Indians have hereunto set their hands at Fort Chipewyan on this thirteenth day of July, in the year herein first above written.

Signed by the parties thereto in the
presence of the undersigned witnesses
after the same had been read and
explained to the Indians by Peter
Mercredi, Chypewyan Interpreter
and George Drever, Cree Interpreter.

A.E. Snyder, Insp, NWMP,
P. Mercredi,
Geo. Drever,
L.M. Le Doussal,
A. DX Chamdour, O.M.I.,
H.B. Round,
Gabriel Brey Nat, O.M.I.,
Colin Fraser,
F.J. Fitzgereld,
B.F. Cooper,
H.W. McLahen

J.H. Ross, *Commissioner*
L.A.J. McKENNA, *Commissioner*

Alex x Laviolette, *Chipewyan Chief*

Julien. x Ratfat, *Chipewyan*
Sept. x Heezell, *Headmen*

Justin x Martin, *Cree Chief*

Ant. x Taccarsoo, *Cree*
Thomas x Gibbot, *Headmen*

The Chipewyan Indians of Slave River and the country thereabouts having met at Smith's Landing on this seventeenth day of July, in this present year of 1899, Her Majesty's Commissioners, the Honourable James Hamilton Ross and James Andrew Joseph McKenna, Esquire, and having had explained to them the terms of the Treaty unto which the Chief and Headmen of the Indians of Lesser Slave lake and adjacent country, set their hands on the twenty-first day of June, in the year herein first above written, do join in the cession made by the said Treaty, and agree to adhere to the terms thereof on consideration of the undertakings made therein.

In witness whereof Her Majesty's said Commissioners and the Chief and Headmen of the said Chipewyan Indians have hereunto set their hands at Smith's Landing, on this seventeenth day of July, in the year herein first above written.

Signed by the parties thereto in the
presence of the undersigned witnesses
after the same had been read and
explained to the Indians by John Trindle,
Interpreter.

A.E. Snyder, Insp, NWMP,
H.B. Round,
J.H. Reid,
Jas. Haly,
John Trindle,
F.J. Fitzgerald,
Wm. McClelland,
John Sutherland

J.H. Ross, *Treaty*
J.A.J. McKenna, *Commissioners*

Pierre Squirrel, *Chief*

Michael x Mandrille, *Headman*

William x Kiscorray, *Headman*

The Chipewyan and Cree Indians of Fort McMurray and the country thereabouts, having met at Fort McMurray, on this fourth day of August, in the present year 1899, Her Majesty's Commissioner, James Andrew Joseph McKenna, Esquire, and having had explained to them the terms of the Treaty unto which the Chief and Headmen of the Indians of Lesser Slave Lake and adjacent country set their hands on the twenty-first day of June, in the year herein first written, do join in the cession made by the said Treaty and agree to adhere to the terms thereof in consideration of the undertakings made therein.

In witness whereof Her Majesty's said Commissioner and the Headmen of the said Chipewyan and Cree Indians have hereunto set their hands at Fort McMurray, on this fourth day of August, in the year herein first above written.

Signed by the parties thereto in the
presence of the undersigned witnesses
after the same had been read and
explained to the Indians by the Rev.
Father Lacombe and T.M. Clarke,

J.A.J. McKenna, *Commissioner*

Adam x Boucher, *Chipewyan Headman*

Seapotakinum x Cree, *Cree Headman*

Interpreters.

A. Lacombe, O.M.I.,
Arthur J. Warwick,
T.M. Clarke,
J.W. Martin,
F.J. Fitzgerald,
M.J.H. Vernon

The Indians of Wapiscow and the country thereabouts having met at Wapiscow Lake on this fourteenth day of August, in the present year 1899, Her Majesty's Commissioner, the Honourable James Hamilton Ross, and having had explained to them the terms of the Treaty unto which the Chief and Headmen of the Indians of Lesser Slave Lake and adjacent country set their hands on the twenty-first day of June in the year herein first above written, do join in the cession made by the said Treaty and agree to adhere to the terms thereof in consideration of the undertaking made therein.

In witness whereof Her Majesty's said Commissioner and the Chief and Headmen of the Indians have hereunto set their hands at Wapiscow Lake, in this fourteenth day of August, in the year herein first above written.

Singed by the parties thereto in the presence of the undersigned witnesses after the same had been read and explained to the Indians by Alexander Kennedy.

A.E. Snyder, Insp. NWMP,
Charles Riley Weaver,
J.B. Henri Giroux, O.M.I., P.M.,
Murdoch Johnston.
C. Falher, O.M.I.,
Alex. Kennedy, Interpreter,
H.A. Conroy,
John McLeod,
M.R. Johnston.

J.H. Ross, *Commissioner*

Joseph x Kapusekonew, *Chief*

Joseph x Ansey, *Headman*

Wapoose x *Headman*

Michael x Ansey, *Headman*

Louisa x Beaver, *Headman*

Appendix B

Memorandum of Understanding
Between

The Whitefish Lake First Nation
and
The Government of the Province of Alberta

Pursuant to the memorandum of intent regarding the Whitefish Lake Treaty Land Entitlement Claim, the parties hereby agree to a process of cooperative management on natural resource matters in areas within the Forest Management Unit S-9 (F.M.U. S-9). Cooperative management is hereby defined as a process of consultation and cooperation on matters of mutual interest.

The parties agree that nothing in this agreement, or resulting from this agreement, is intended to abrogate or derogate from an Aboriginal or treaty rights referred to in section 35 of the Constitution Act, 1982.

The parties acknowledge and agree that nothing in this agreement, or any subsequent agreement signed as a result of it, shall be construed as limiting the Government of Alberta in the exercise of its legislative and regulatory jurisdiction over matters in relation to natural resources.

Objectives of the Agreement

1) Develop a process of mutual cooperation and consultation on natural resource matters in areas of F.M.U. S-9 in order to attempt to resolve issues of concern.

2) As a first priority, the parties will initially undertake a process to:

    i) secure for the Whitefish Lake First Nation, or some wholly owned corporate entity, a Deciduous Timber Permit in F.M.U. S-9 of not less than 50,000 cubic meters per year for a period of not less than five years commencing in 1994.

    ii) attempt to secure employment and business opportunities and other socio-economic benefits to Whitefish Lake First Nation members from the remainder of the deciduous timber allocation in F.M.U. S-9, through consultation with private sector companies in the area.

    iii) secure for members of the Whitefish Lake First Nation a portion of the commercial fishery allocation in the lakes within F.M.U. S-9.

3) Additional processes will be initiated to attempt to address other natural resource matters which are jointly identified by the Steering Committee described below.

Steering Committee

- A Whitefish Lake First Nation - Province of Alberta Steering Committee shall be established to undertake consultation regarding the objectives of this agreement. Working sub-committees will be established to deal with specific issues.

- The Steering Committee shall be responsible for identifying key resource management issues and areas of concern; for establishing processes to address these key issues; and for recommending processes to resolve issues; including development of recommendations for policy interpretations or changes in policy that may be required to achieve the objectives of this agreement.

- The Steering Committee shall consist of the assistant Deputy Minister of the Lands and Forest Service, Assistant Deputy Minister of Natural Resources Services, a senior representative of Alberta Aboriginal Affairs and representatives from the Whitefish Lake First Nation. Other representatives may attend to address specific issues.

- The Committee will meet on a monthly basis or as required to address the objectives of the agreement and provide appropriate documentation.

Dated, this 12th day of December 1994

Appendix C

Whitefish Lake Co-operative Management Memorandum of Understanding

The Government of the Province of Alberta
and
The Whitefish Lake First Nation

Fish and Wildlife Management Committee: Guiding Principles

Parties Agree to provide guidance in the management of fish and wildlife within the S-9 F.M.U. and to arrive at long term management planning taking into account the health and biodiversity of the S-9 F.M.U.;

Parties Agree that traditional ecological knowledge (i.e. WFL Traditional Land Use and Occupancy Study), as well as, scientific knowledge will be incorporated into the co-operative management process;

Parties Agree to promote economic, employment, training and education opportunities for residents of Whitefish Lake First Nation in all sectors of natural resource and wildlife management;

Parties Agree to meet on a monthly basis to review and discuss issues pertaining to the S-9 Forest Management Unit. These meetings will be approached as a forum to discuss matters of interest to all stakeholders. The success of the Working Group will be its flexibility and adaptability to meet as issues arise outside of the pre-scheduled Working Group meetings;

Parties Agree that if resolution on specific matters can not be resolved at the Working Group level the matter will be referred to the regional Implementation Committee for review. Further, no actions will be taken at the Working Group level until the matter has been resolved by the Implementation Committee;

Parties Agree to recognize and address cross-cultural and linguistical barriers that exist to equal participation in the co-operative management process. Often the language and terminology used by both government representatives and community residents regarding wildlife management or hunting practices can act as obstacles to the management process. Failure to recognize cross-cultural differences will lead to frustration and a possible breakdown of the entire co-operative management process;

Parties Agree that the experience of successful (and unsuccessful) co-operative management agreements offers valuable lessons for newly established committees who are embarking on their own co-operative management regimes. It will remain important for all stakeholders in the co-operative management process to take part in workshops and seminars to share and learn from the experience of others who are involved in similar management efforts;

Parties Agree to ensure that all Working Group members are aware of the same sets of information when dealing with wildlife management issues. Most often, misunderstandings are a result of poor communication;

Parties Agree to address issues within a time frame which allow for community input and involvement;

Parties Agree that wildlife\habitat research which is of mutual concern to both government and WFL residents will be approached in a co-operative manner, thus achieving greater accuracy in research results while strengthening the co-operative management process.

Whitefish Lake Co-operative Management Memorandum of Understanding

The Government of the Province of Alberta
and
The Whitefish Lake First Nation

Timber Management Committee: Guiding Principles

Parties Agree that the management of timber resources within the S-9 F.M.U. will be based on long-term sustainable initiatives that take into account the health and biodiversity of the forest area;

Parties Agree to provide guidance in long term management planning of timber resources and to mutually arrive at sustainable forestry objectives;

Parties Agree that traditional ecological knowledge (i.e. WFL Traditional Land Use and Occupancy Study), scientific knowledge, and economic factors will be incorporated into the timber management process;

Parties Agree to promote economic, employment, training and education opportunities for residents of Whitefish Lake First Nation in all sectors of the forest industry;

Parties Agree to meet on a monthly basis to review and discuss issues pertaining to the S-9 Forest Management Unit. These meetings will be approached as a forum to discuss matters of interest to all stakeholders in the forest industry. The success of the Working Group will be its flexibility and adaptability to meet as issues arise outside of the pre-scheduled Working Group meetings;

Parties Agree that if resolution on specific matters can not be resolved at the Working Group level the matter will be referred to the regional Implementation Committee for review. Further, no actions will be taken at the Working Group level until the matter has been resolved by the Implementation Committee;

Parties Agree to recognize and address cross-cultural and linguistical barriers that exist to equal participation in the co-operative management process. Often the language and terminology used by both government representatives and community residents regarding forest management or uses can act as obstacles to the management process. Failure to recognize cross-cultural differences will lead to frustration and a possible breakdown of the entire co-operative management process;

Parties Agree that the experience of successful (and unsuccessful) co-operative forest management agreements offers valuable lessons for newly established committees who are embarking on their own co-operative management regimes. It will remain important for all stakeholders in the co-operative management process to take part in workshops and seminars to share and learn from the experience of others who are involved in similar forest management efforts;

Parties Agree to ensure that all Working Group members are aware of the same sets of information when dealing with forest management issues. Most often, misunderstandings are a result of poor communication;

Parties Agree to address issues within a time frame which allow for community input and involvement;

Parties Agree that research that is of mutual interest to both government and WFL residents will be approached in a co-operative manner, thus achieving greater accuracy in research results while strengthening the co-operative management process.

Whitefish Lake Co-operative Management
Memorandum of Understanding

The Government of the Province of Alberta
and
The Whitefish Lake First Nation

Non-Renewable Natural Resource Management Committee: Working Goup Guiding Principles

Parties Agree to provide guidance in the management of non-renewable natural resources within the S-9 F.M.U. and to arrive at long term management planning taking into account the health and biodiversity of the S-9 F.M.U.;

Parties Agree that traditional ecological knowledge (i.e. WFL Traditional Land Use and Occupancy Study), scientific knowledge, and economic factors will be incorporated into the co-operative management of non-renewable natural resources;

Parties Agree to promote economic, employment, training and education opportunities for residents of Whitefish Lake First Nation in all sectors of natural resource management;

Parties Agree to meet on a monthly basis to review and discuss issues pertaining to the S-9 Forest Management Unit. These meetings will be approached as a forum to discuss matters of interest to all stakeholders. The success of the Working Group will be its flexibility and adaptability to meet as issues arise outside of the pre-scheduled Working Group meetings;

Parties Agree that if resolution on specific matters can not be resolved at the Working Group level the matter will be referred to the regional Implementation Committee for review. Further, no actions will be taken at the Working Group level until the matter has been resolved by the Implementation Committee;

Parties Agree to recognize and address cross-cultural and linguistical barriers that exist to equal participation in the co-operative management process. Often the language and terminology used by both government representatives and community residents regarding resource management and land use can act as obstacles to the management process. Failure to recognize cross-cultural differences will lead to frustration and a possible breakdown of the entire co-operative management process;

Parties Agree that the experience of successful (and unsuccessful) co-operative management agreements offers valuable lessons for newly established committees who are embarking on their own co-operative management regimes. It will remain important for all stakeholders in the co-operative management process to take part in workshops and seminars to share and learn from the experience of others who are involved in similar management efforts;

Parties Agree to ensure that all Working Group members are aware of the same sets of information when dealing with non-renewable natural resource management issues. Most often, misunderstandings are a result of poor communication;

Parties Agree to address issues within a time frame which allow for community input and involvement;

Parties Agree that research that is of mutual interest to both government and WFL residents will be approached in a co-operative manner, thus achieving greater accuracy in research results while strengthening the co-operative management process.

Appendix D

Whitefish Lake First Nation

Traditional Land Use & Occupancy Study

(Note: The details of the maps presented have been sufficiently generalized as to protect the landscape knowledge of the WFLFN while still representing the extent of community land use patterns).

I. PROJECT BACKGROUND

Following the establishment of the Whitefish Lake reserve in 1908, it was recognized that the Crown had failed to allot a land base to which the Whitefish Lake band had legally been entitled. Thus in 1985, a treaty land entitlement claim was submitted to the Government of Canada. The entitlement claim was validated by the Crown in April 1986, and subsequent negotiations with the province of Alberta resulted in a Memorandum of Intent in November of 1988. In addition to providing a supplementary land base, the Memorandum contained a clause indicating that the province of Alberta and WFLFN would enter into discussions regarding co-operative approaches to land, wildlife, and fisheries management in the area surrounding the Whitefish Lake reserve (2,700 sq. km.). Through these negotiations, WFLFN was successful in establishing the only First Nation - Province of Alberta Co-operative Management Agreement to date. This agreement is in the form of a Memorandum of Understanding (MOU) signed between Alberta Environmental Protection, Alberta Aboriginal Affairs, and the WFLFN. Terms of the MOU include economic development initiatives, education and training programs for Whitefish Lake residents, and the implementation of a cooperative management regime for local lands and resources.

A primary component of the co-operative management agreement was the undertaking of a land use and occupancy study of the Whitefish Lake territory. It was recognized that any attempt to make informed land management decisions required an understanding of community land and resource use patterns. As well, this study was designed to incorporate the cultural (non-market) values of community residents. Recognizing that these values would need to be reconciled with the economic interests of resource developers operating in the area, the quantification of both market and non-market values was initiated.

This report represents the initial results of that study. It is not, however, meant to represent a complete account of Whitefish Lake land and resource use. Rather, this report is meant to represent an initial account of a dynamic process of land use activities; one that recognizes both temporal and spatial shifts in land use. Therefore, the Whitefish Lake Land Use and Occupancy Study should be viewed as an ongoing documentation of community land use patterns.

The area of use and occupancy identified in this report (S-9 Forest Management Unit) represents the land base recognized under the terms of the cooperative management agreement. While this area represents a major portion of the Whitefish Lake band's traditional territory, it does not constitute the extent of their historic land use patterns. Therefore, this report has placed an emphasis on current and recent uses (i.e. c.1930s) that have occurred within the S-9 area based upon the memory of community elders along with limited supplementary accounts of nineteenth and early twentieth century occupation from a preliminary archival review. Further archival and oral history research regarding historic land use and regional occupation will be forthcoming in future research reports.

II. PROJECT OVERVIEW

With an emphasis being placed on the use and occupation of the S-9 area within a period of living memory, a range of local knowledge was sought. The areas addressed in this research consist of: occupation sites, burial locations, archaeological sites, local place names, traditional harvesting areas, trapline distribution, traditional and current trails, berry picking areas, and the distribution of commonly used medicinal plants and herbs. Further, information regarding the local furbearer population and the distribution, staging and nesting areas of migratory and non-migratory birds and waterfowl was sought.

Using this approach it was our intention to show that the knowledge held by community residents is based upon experiences that have been passed down from generation to generation. It is a multidimensional understanding of the landscape that can not be separated nor considered mutually exclusive from the people who hold it. Viewed in this way, the information presented in this report should be viewed as:

> ***"... a body of knowledge and beliefs transmitted through oral tradition and first-hand observation. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use. Ecological aspects are closely tied to social and spiritual aspects of the knowledge system. The quantity and quality of TEK varies among community members, depending on gender, age, social status, intellectual capability, and profession (hunter, spiritual leader, healer, etc.). With its roots firmly in the past, TEK is both cumulative and dynamic, building upon the experience of earlier generations and adapting to the new technological and socioeconomic changes of the present." Dene Cultural Institute***

III. METHODS

Integral to the success of this study was the involvement of the Whitefish Lake Elders Advisory Council which served as a steering committee throughout the development and duration of the project. Specifically, the contributions of Bennett Grey, Eunice Grey, Mabel Grey, Henry Lubicon, Frank Nahachick, Joseph Nahachick, George Tallman, Jean Whitehead, Peter Kesapapa, Henry Thunder, Evelyn Thunder, Mariane Thunder, Griffin Grey, Russell Grey, and Pat Grey made this work possible.

Based upon techniques developed in previous land use research (e.g., Freeman 1976, Brody 1981, Usher 1990, Fort McKay First Nation 1994) similar approaches, as described by Freeman (1976) and Usher (1990) have been utilized.

Initial research began in August of 1996 with the WFLFN Elders Advisory Council to establish appropriate methods and protocols for the research agenda. This meeting was followed by a number of individual and group mapping sessions with council members in an attempt to refine our methodology further. Recognizing that an essential principle of land use and occupancy documentation is the adjustment of categories to conform to the experience and concepts of community residents, subsequent modifications were expected to arise during these initial sessions. These modifications were then incorporated into the interview protocols prior to community wide research. The majority of land use research was conducted from May 15 through August 30, 1997 with subsequent steering committee meetings occurring on a regular basis throughout the development of this report.

The primary method of data collection employed a time horizon of within living memory (contemporary or current use). This approach is believed to provide a broad range of coverage that relies on informant recall. A complete coverage of those known to have the greatest knowledge and personal extent of land use were sought (i.e. each of the 26 registered trappers in the S-9 area). In this way a close approximation of the maximum extent of use was established by interviewing a relatively finite sample of land users (Usher 2: 1990).

Rather than developing a structured interview questionnaire, the interview format relied upon open ended questioning which would allow for elaboration as to the importance of the land, as well as the location and description of specific resources. From these interviews, individual map biographies were created that represented the respondent's lifetime involvement on the land. From these individual biographies a composite map (summary), showing a collective pattern of land use was developed. These composite maps, representing each of the categories listed above, represent an initial account of the traditional and contemporary land use of the Whitefish Lake community.

IV. PHYSICAL DESCRIPTION OF THE COOPERATIVE MANAGEMENT AREA

The area included under the terms of the cooperative management agreement comprises a 2,700 sq. km. area situated in north central Alberta (S-9 Forest Management Unit). The closest regional center is the community of High Prairie, located approximately 76 kilometers to the southwest. The management area is trisected in a north - south direction by Route 88 and Route 750. The Metis Settlement of Gift Lake represents the southwest boarder of the co-operative management area.

The physical landscape of the management area can be characterized as a gently undulating plain consisting of a number of upland areas dissected by two primary river drainages: Sipihk 'The Big River' (Utikuma River) and Atcakasipik 'Mink Creek'. The management area consists predominantly of forested crown lands that lie within the Boreal Mixwood Ecoregion. The forest cover is principally made up of aspen, balsam poplar, jackpine, white and black spruce dispersed between a diversity of wetlands, peatlands, lakes and streams.

The management area is known to support a diversity of wildlife species. These include approximately 236 species of birds and 43 species of mammals (Westworth and Associates

Ltd. 1990). The distribution of rivers, lakes and streams within the management area support important domestic, commercial, and recreational fisheries.

Principal land use in the study area includes the subsistence pursuits of the Whitefish Lake First Nation (i.e., fishing, hunting, trapping, and gathering), oil and gas exploration and extraction, timber harvesting, sport hunting and fishing, and other forms of recreational activities.

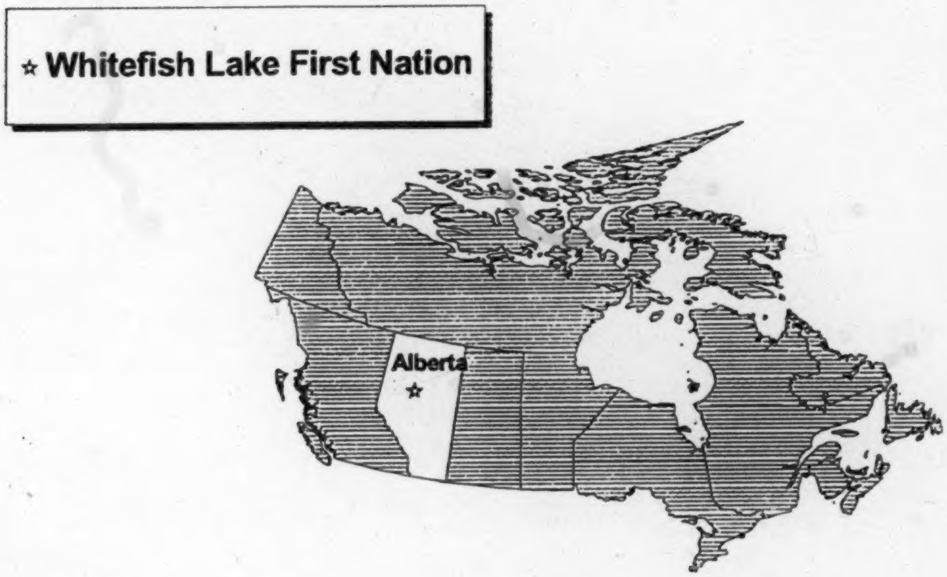
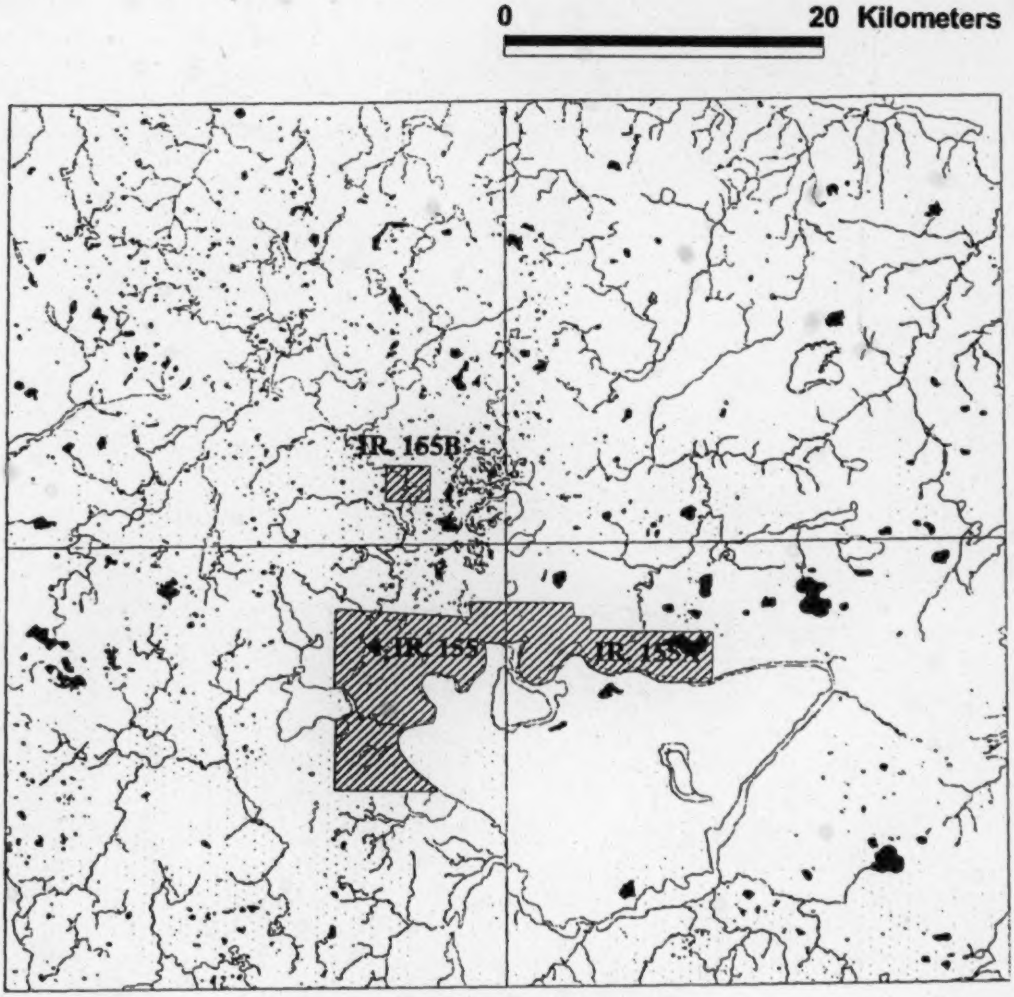


Figure 1. Whitefish Lake First Nation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IR. 165B
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IR. 155

Figure 2. Whitefish Lake Reserves
(I.R. 155, 155A, 155B)

Local Land & Resource Use

Burial Sites
Archaeological and Historic Sites
Cabins and Trails
Local Place Names
Traplines
Berries
Birds and Waterfowl
Large Mammals
Fur Bearers
Herbs and Medicinal Plants
Fisheries

Burial Sites

A number of burial sites have been recorded within the cooperative management area (S-9 FMU). These burial sites range from one to sixteen graves. However, in some cases interviewees were not sure of the exact number of graves in some of the locations. In these instances a collective estimate from WFL elders was recorded.

All graves are designated on the map with the number of approximated graves at each location. Most of the grave sites correspond with places that individuals or families had once occupied. Some of the graves were reported to have had visible markings, such as head stones, wooden crosses, or fenced areas. However, many of these areas remain only in the memories of Whitefish elders, adding urgency to the documentation of these sites.

At this point in the research a total of 11 burial location, with approximately 40 individual burials have been recorded (Note: legal descriptions of burial locations have been removed from this appendix as to ensure the protection of these sites).

Archaeological Sites

Much of the archaeological survey work that has been done in the study area (S-9 F.M.U) has been conducted by Tri Link Resources Ltd. as part of a historical resources impact assessment prior to the construction of wellsites, pipeline alignments and plant expansions.

The following archaeological sites are significant for several reasons, including:

> Site integrity, or degree to which an archaeological site has been impaired or disturbed as a result of past land alteration, is an important consideration in evaluating site significance. In this regard, it is important to recognize that although an archaeological site has been disturbed, it may still contain important scientific information.
>
> Archaeological resources may be of scientific value in two respects. The potential to yield information which, if properly recovered, will enhance understanding of [Alberta's] archaeological resources is one appropriate

measure of scientific significance. In this respect, archaeological sites should be evaluated in terms of their potential to resolve current archaeological research problems. Scientific significance also refers to the potential for relevant contributions to other academic disciplines or to industry.

Public significance refers to the potential a site has for enhancing the public's understanding and appreciation of the past. In this respect, the interpretive, educational, and recreational potential of a site are valid indications of public value. Public significance criteria such as ease of access, land ownership, or scenic setting are often external to the site itself. The relevance of archaeological resource data to private industry may also be interpreted as a particular kind of public significance.

Historic archaeological sites may relate to individuals or events that made an important, lasting contribution to the development of a particular locality or the province. Historically important sites also reflect or commemorate the historic socioeconomic character of an area. Normally, sites having high historical value will also have high public value (Apland and Kenny 1989: 13).

1. Site Name: Utikamasis Lake NT.'S. Ref.: Atikameg 83 - 0/13
Latitude: 55 54' 25"- Longitude: 115 38' 25" UTM Location: 11UNM845962
Legal Description: SE 1/4- NE 1/4 of section 4 - Twp.80, R. 11 - West of the 5 M
Air Photo Ref. #: AS 1221 Series: Line 15/195 Elevation: 1:20,000

Description: * Site is in a grassy field at outlet of Utikameg River on east side of Utikumasis Lake (Hudson's Bay on right).
* Materials found on vehicle track exposure ca. 20 m. from the bank of the river, and 1.5 m. above it.
* 1 black chert flake and 1 core (?) of siltstone.
* Dating evidence suggests prehistoric based on use of lithic material.

2. Site Name: Gift Lake NT.'S. Ref: Atikameg 83-0/13
Latitude: 55 52' 55"- Longitude: 115 45' 40" UTM Location: 11UNM734933
Legal Description: NW1/4 - NW 1/4of section 28 -Twp79, R 12 - West of the 5 M
Air Photo Ref. #: AS 1221 Series: Line 15/190 Elevation: 1:20,000

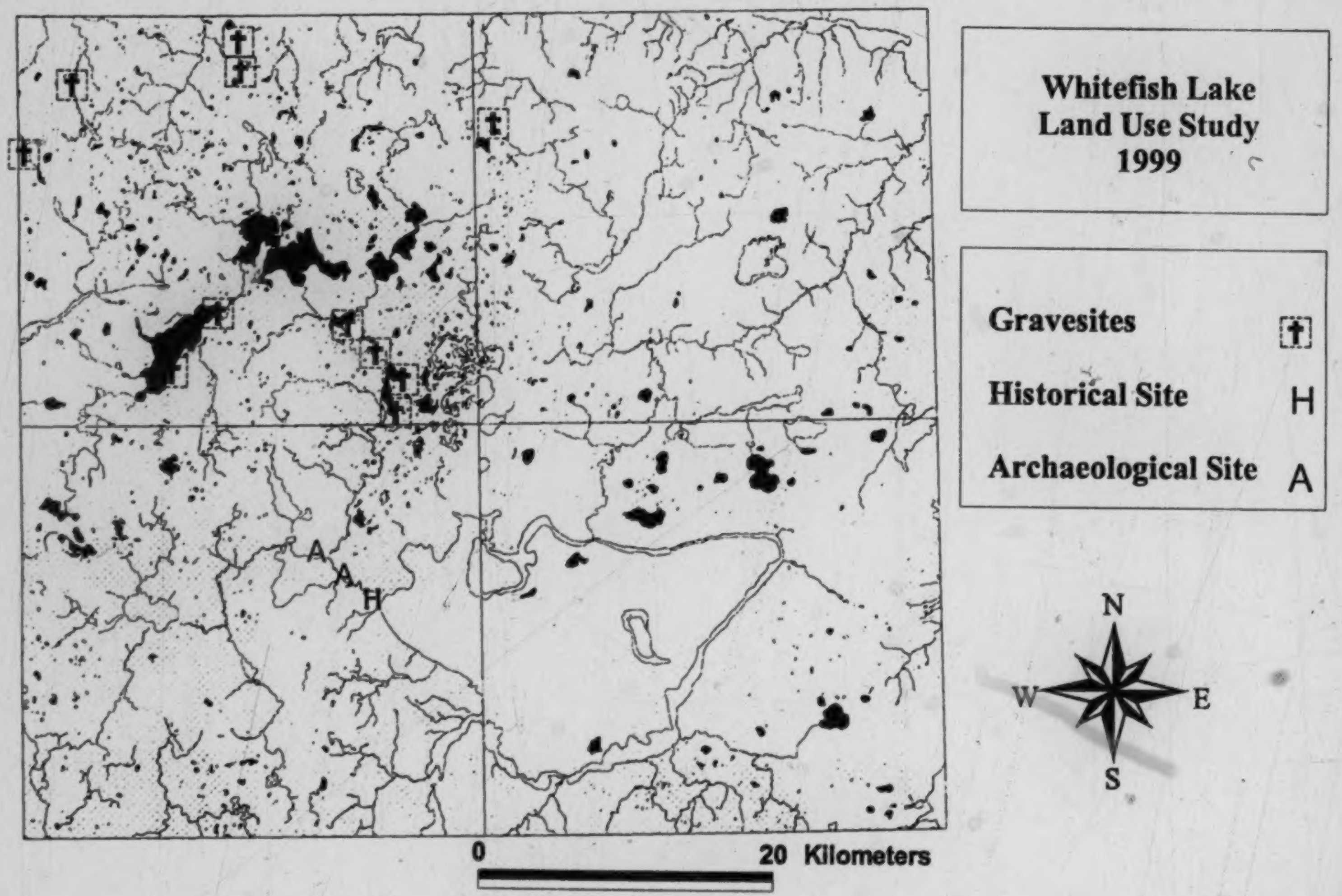
Description: * Site is a flat disturbed area on the left bank of Utikameg River outlet on the east side of Gift Lake.
* Surface scatter consisting of cultural debris including chert flakes, fire cracked rock, quartzite flakes and scraper.
* Dating evidence suggests prehistoric based on use of lithic material.

Historic Site

Hudson Bay Outpost (74516)
Location: Two. 79 R. 11 - West of the 5th M.
Located on Utikameg Lake near the mouth of the Utikumasis River.

Historic Significance: Because of the large number of freemen and Cree wintering at Utikameg Lake in 1820-1821, HBC's district manager, J.L. Lewis sent Joseph Cardinal (interpreter) and five men to establish a post in October 1820. The outpost served mainly as a fishing house.

Archaeological Significance: The outpost was closed during the spring of 1821.


Whitefish Lake
Land Use Study
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Gravesites
Historical Site H
Archaeological Site A
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Whitefish Lake First Nation Place Names

The accompanying maps represent a mosaic of culturally significant places to the residents of Whitefish Lake. These places have been named, often with stories attached, thereby transforming the features of the physical landscape into the cultural geographies of community residents.

Local place names are numbered consecutively beginning with number 1 on the southwest end of Utikameg (Whitefish Lake), and proceeding clockwise in a northeast direction. These numbers correspond with the site location on the accompanying map. A translation has been provided next to the local Cree term. Three types of sites have been recorded during the research process. The first are resource procurement areas. These are areas where specific resources can be found, such as Wacaskomitsowinkayak (Rat Root Lake) or Wahcaskosamahkan (Rat Lakes). The second are descriptive locals, such as Kihskwaskoakak (As Far As The Mud Is) or Wihkwiwasak (Inside Bay). And the third are sites where specific events have occurred, such as Burnt Forest Lake or Koskayowik (New Lake); thus illustrating an important temporal dimension in local place names.

1) **Kaminstikwahchak** (Little Island)

2) **Wihkwiwasak** (Inside Bay)

3) **Eka Wasahk** (Sandy Bay)

4) **Omoskosipisis** (Salt Lick Creek)

5) **Maskominiwatiwak** (Salt Point)

6) **Kihskwaskoakak** (As Far As The Mud Is)

7) **Saktawak** (Mouth of the River)

8) **Miniwatimik** (Fish Point)

9) **Watston Kakotik** (Hanging Nests)

10) **Minstikwaskowonikapik** (Floating Russets (cattails))

11) **Wasasek** (Little Bay)

12) **Sipankok** (Channel)

13) **Kamsak Minstihk** (Big Island)

14) **Wasak** (Big Bay)

15) **Minstihk Wapshok** (Small Rock Island)

16) **Atikameg** (Whitefish Lake)

17) **Kaninsk Sihk** (Stoney Point)

18) **Kasipihkamak** (The End of the Lake)

19) **Minstikwapsk** (Rock Island)

20) **Chakiwiyak** (Big Point)

21) **Kanisotikwaw** (Two Rivers)

22) **Kametoskak** (Poplar River)

23) **Sakco Wasik** (Mouth of the River)

24) **Atikamegosak Ahihkani** (Little Whitefish Lake)

25) **Sipisis** (Little Whitefish River)

26) **Miniwahcimsik** (Little Point)

27) **Wahcaskosamahkan** (Rat Lakes)

28) **Kaminscikowsik** (Little Island Lake)

29) **Atcakasipik** ((Mink) Creek)

30) **Sipihk** (The Big River)

31) **Maskikosakahikanisis** (Little Muskeg Lake)

32) **Ciyaskosakahikan** (Gull Lake)

33) **Mostosakahikan** (Buffalo Lake)

34) **Maskihkosakahikan** (Muskeg Lake)

35) **Nishksakahihkan** (Goose Lake)

36) **Kakinokamak** (Long Lake)

37) **Nipisikopawsakahikan** (Willow Lake)

38) **Nisksakahikanisis** (Little Goose Lake)

39) **Niskisipisis** (Goose Creek)

40) **Maskihkosakahikan** (Muskeg Lake)

41) **Kaskawkamak** (Narrow Lake)

42) **Pakwaw Sakahikan** (Shoel Lake)

43) **Wisakimsakahikan** (Cranberry Lake)

44) **Apakwcissakahikan** (Bat Lake)

45) **Micimowatas** (Food Lake or Cache Lake)

46) **Kawawiyak Sakahikanisis** (Round Lake)

47) **Kawatskak** (Holes in Lake)

48) **Minstikwaskaw Sackahikan**(Island Lakes)

49) **Kakinokamasik** (Little Long Lake)

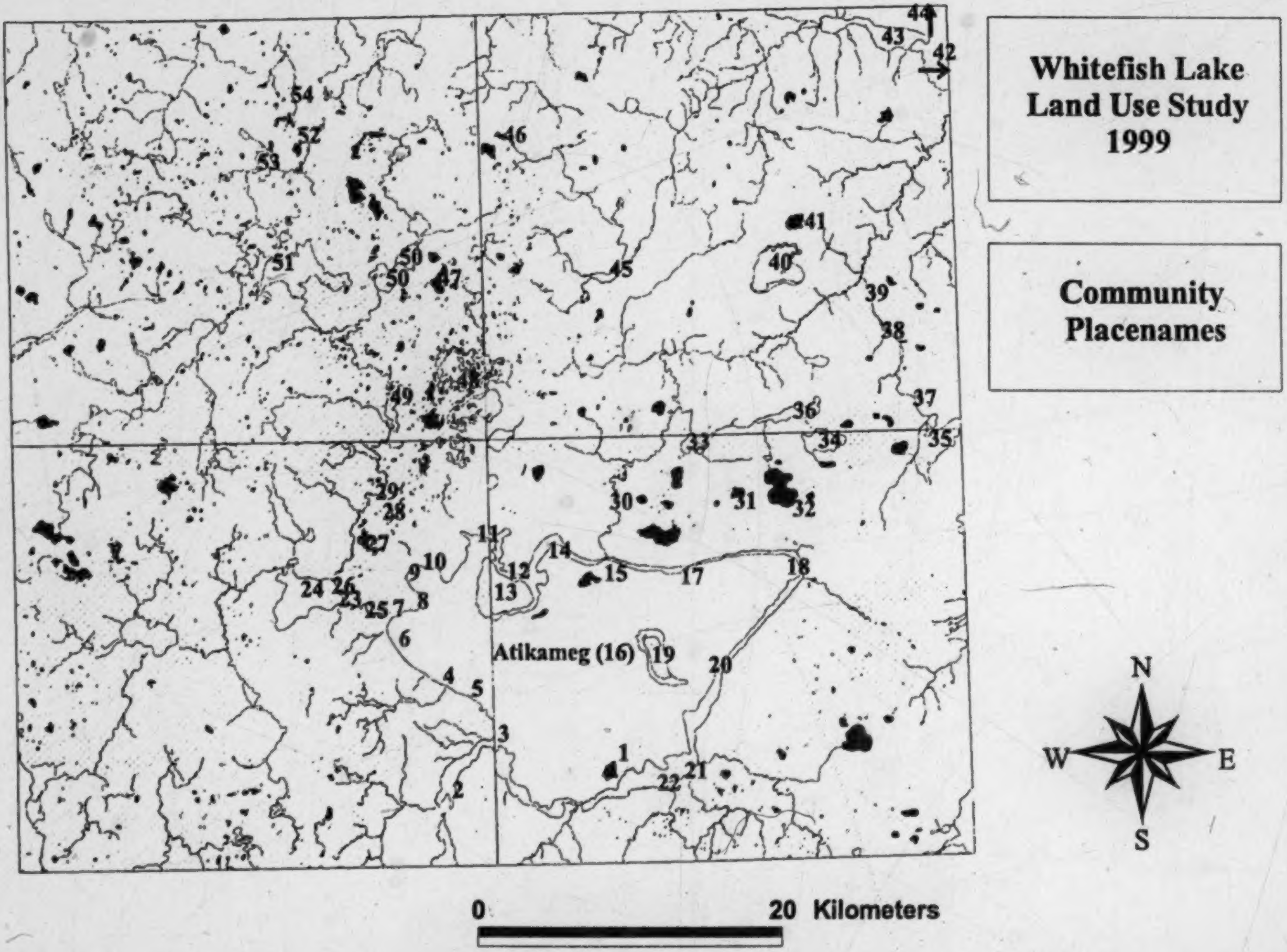
50) **Kaniswastikwaw** (Twin Lakes)

51) **Acakasakahkan** (Mink Lakes)

52) **Wacaskomitsowinkayak** (Rat Root Lake)

53) **Koskayowik** (New Lake)

54) **Sienpanak Kakokocikwan** (Ribbon Hanging Creek)



Whitefish Lake
Land Use Study
1999

Community
Placenames

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BIRDS AND WATERFOWL

The categories of birds mapped in the study area include: Canada goose, ducks, loons, pelicans, swans, eagles, grouse, gulls, and ptarmigan. While there are additional species present in the study area, reference to them was limited during interview sessions.

The mapping of waterfowl habitat and corresponding harvesting sites illustrates intensive use of Utikameg (Whitefish Lake), Atikamegosak Ahihkani (Little Whitefish Lake), Acakasakahkan (Mink Lake), and Kaniswastikwaw (Twin Lakes). Of these, Utikameg serves as a primary breeding and staging area for a number of waterfowl species, including: Widgeons, Shoveler, Mallards, Gadwells, Lesser Scaup, Redheads and Canvasbacks.

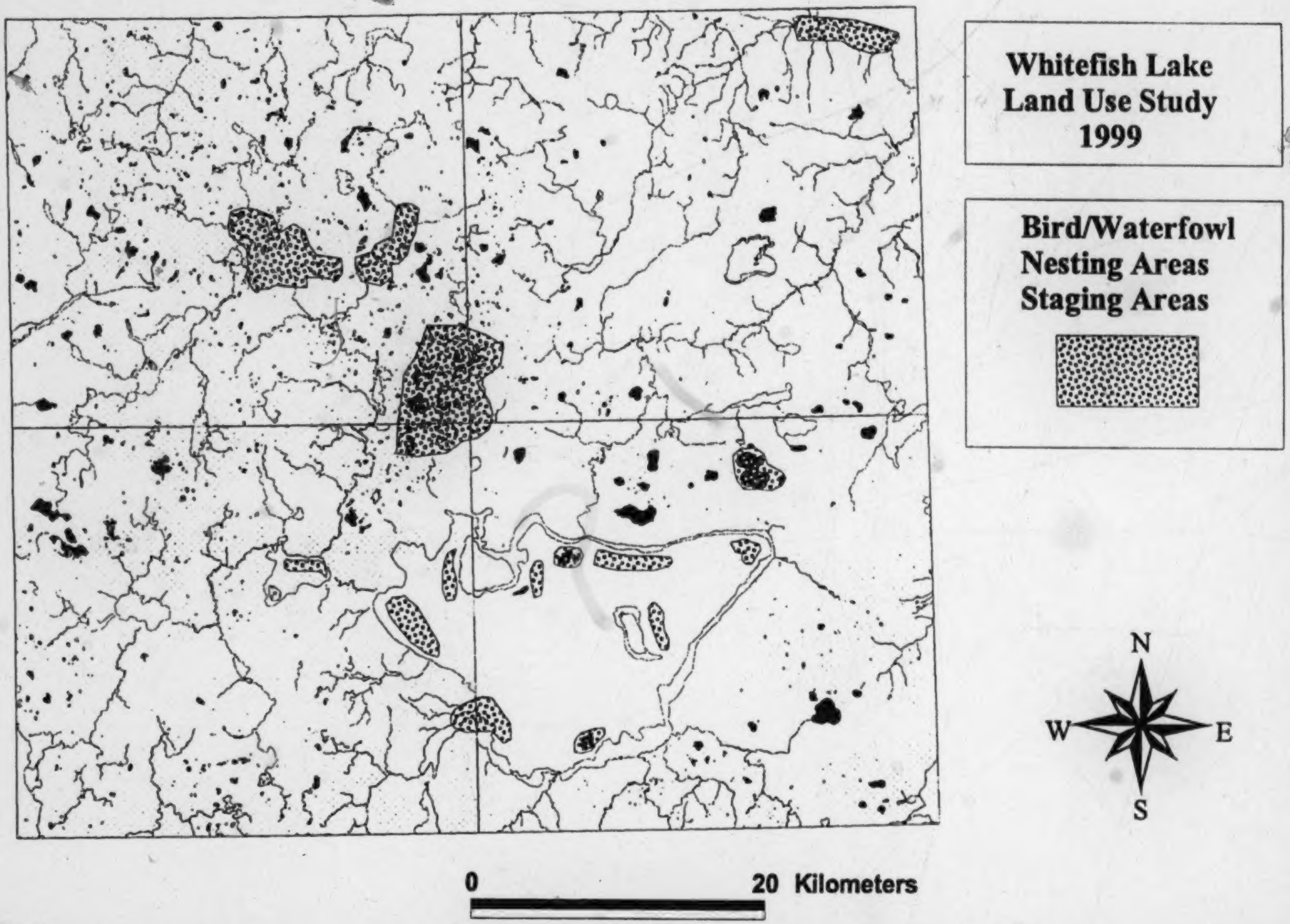
The majority of harvesting on Utikameg occurs along the western portion of the lake. According to local hunters, exposure to prevailing winds directly affects the distribution of waterfowl. The western shore offers protection from westerly winds and the resulting wave action on the lake. Additionally, western sites that are sheltered from winds have a greater abundance of aquatic vegetation available to staging waterfowl.

The study area also contains important sites for colonial nesting birds. During the study period three species were reported to have long occupied both Utikameg and Atikamegosak Ahihkani (Little Whitefish Lake), they include; the White Pelican, Double-Crested Cormorant, and the Western Grebe. Whitefish Lake residents noted a recent rise in the White Pelican population. These observations are significant due to the White Pelican's placement on the American Audoban's Blue List which identifies species whose low numbers have undergone non-cyclical declines.

Few Canada Geese were reported to be present in the study area. This corresponds with census data from the Canadian Fish and Wildlife Service that have similarly reported few species present in this area.

Gull eggs continue to make an important contribution to the community diet. Eggs are harvested from the small islands located in the southern end of Utikameg, east of Eka Wasahk (Sandy Bay). Gull eggs are also harvested from Kamsak Minstihk (Big Island). It was reported that more gulls have been nesting on Kamsak Minstihk (Big Island) in recent years due to crow ducks forcing gulls from Minstihk Wapshok (Small Rock Island).

6


Whitefish Lake
Land Use Study
1999
Bird/Waterfowl
Nesting Areas
Staging Areas
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20 Kilometers

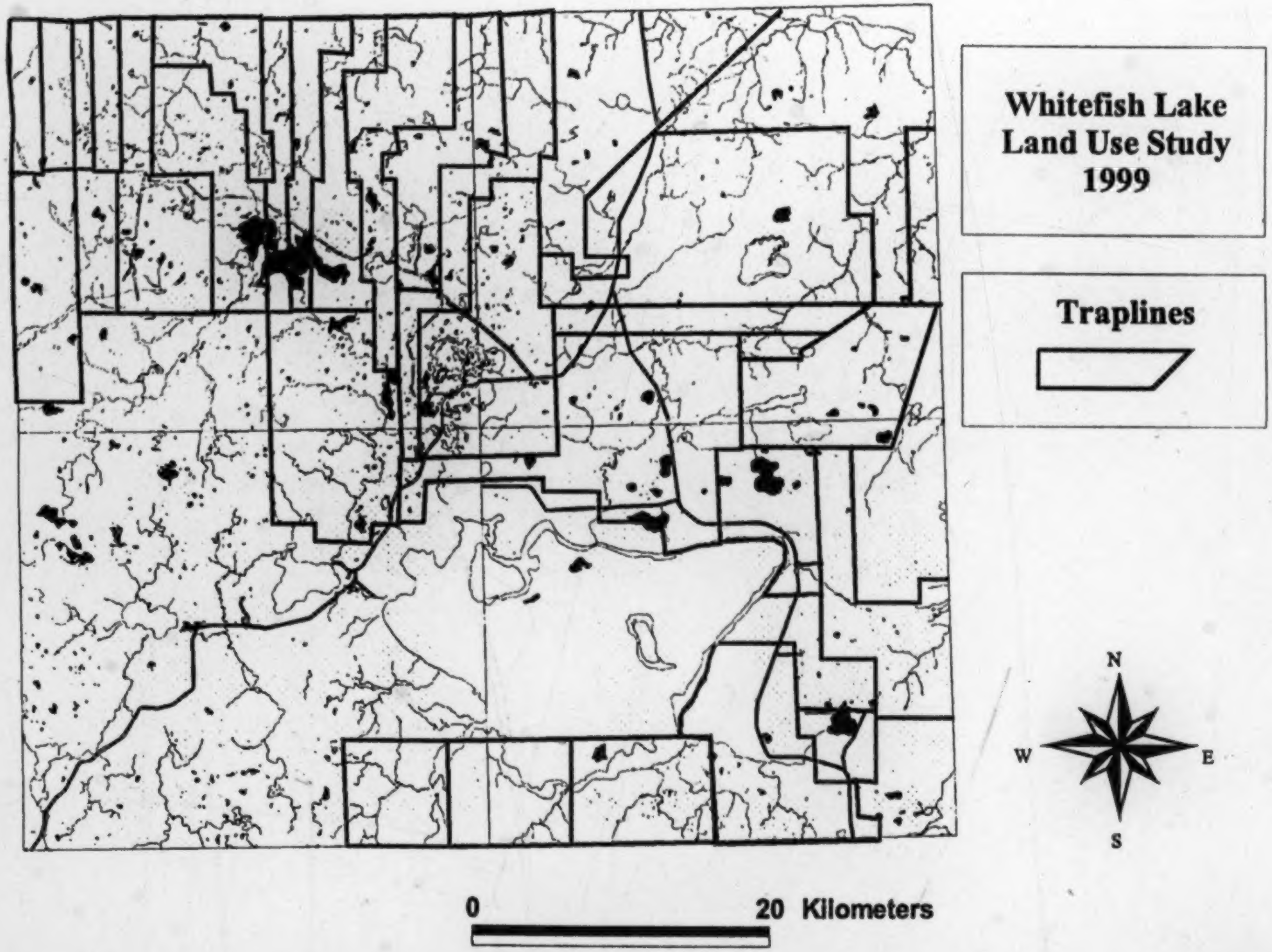
TRAPLINES

The registration of traplines was officially introduced in the 1930s. The registration process was the province's first attempt at regulating fur production for the commercial markets. The system was further altered when, in the 1960s, the province changed from a linear distribution of traplines (running the length of creeks and rivers) to a system of trapping areas. These areas are represented on the corresponding map. There are 26 individual traplines registered in the co-operative management area. Of these 25 are held by Whitefish Lake band members.

CABINS AND TRAILS

50 cabins were identified by local trappers to exist within the co-operative management area. Of these, 45 were said to be actively used. These sites, however, mark only a fraction of places where community residents may have camped throughout a lifetime of travel. These sites represent important focal points for subsistence harvesting, as well as cultural activities for Whitefish Lake residents. The Whitefish Lake community is strongly interested in protecting these sites along with maintaining the quality of the local environment that surrounds them.

Connecting these sites is an extensive trail system that ranges throughout and beyond the management area. These trails, once cut exclusively by hand, have been largely replaced by seismic lines that now zigzag the local landscape. Major travel routes where found to have run east to west (the Old Wabasca Trail), linking Whitefish Lake to the Big Stone band; and north to south, linking Whitefish Lake to the bands of Woodland, Lubicon, and Loon River. The recording of trials and travel routes represent only major travel corridors. Not represented are the many 'minor' trails commonly used by community residents. It would be difficult and perhaps impossible to record community travel routes in their totality. Any attempts would show that there exists no area within the management unit that has not been traveled or that is not intimately known through its continued use.


Whitefish Lake
Land Use Study
1999
Traplines
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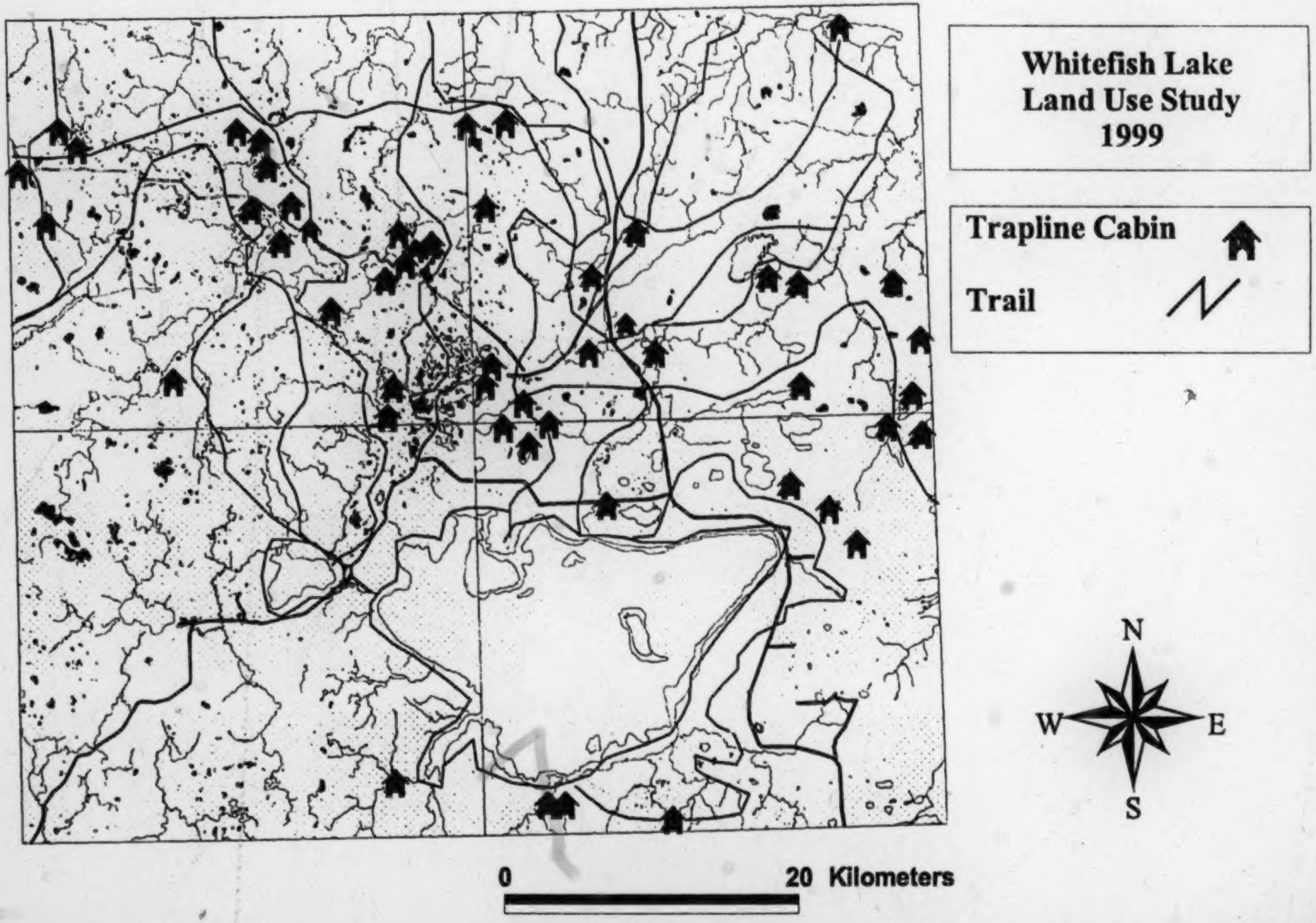
Whitefish Lake
Land Use Study
1999
Trapline Cabin
Trail
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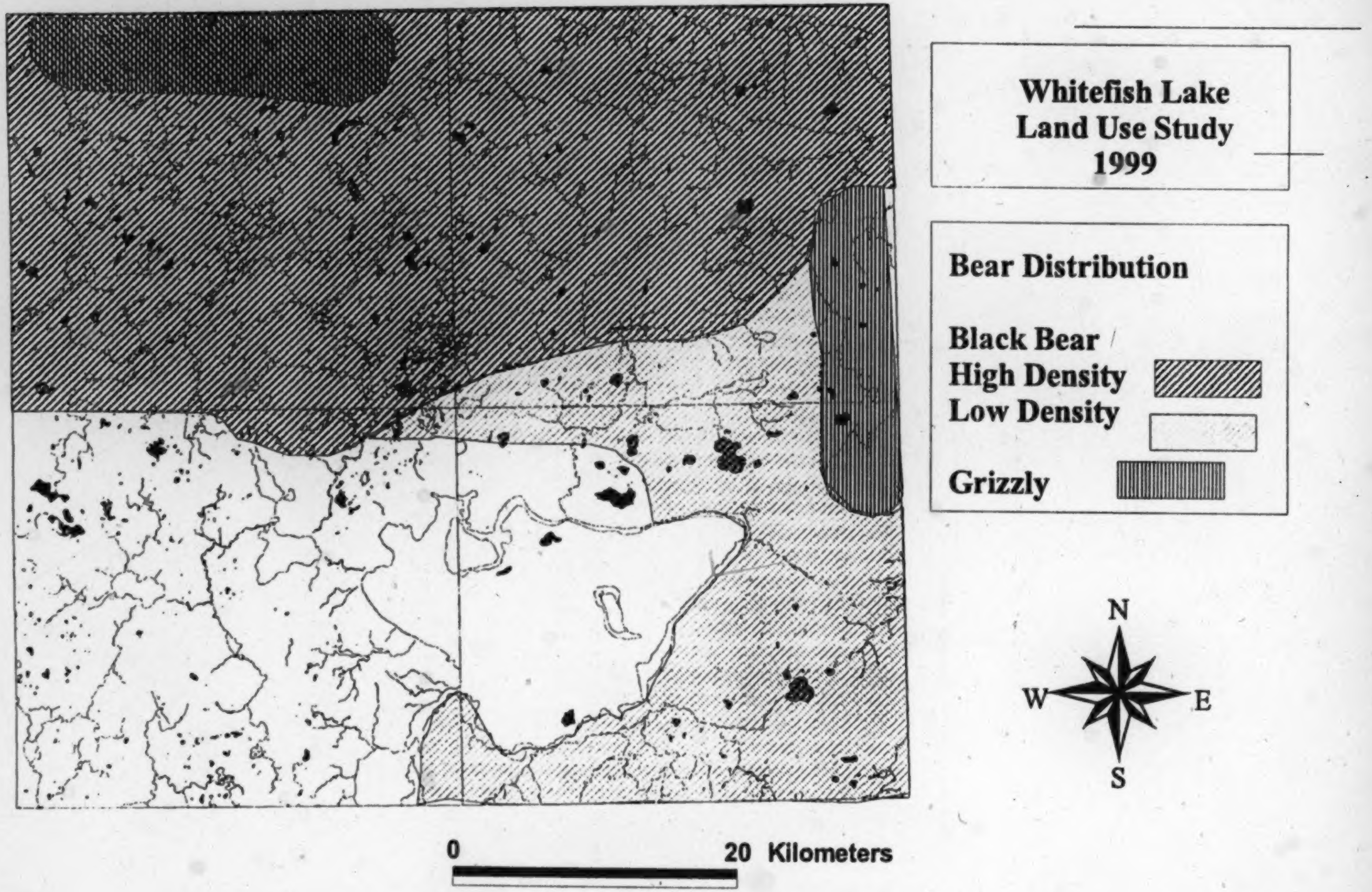
20 Kilometers

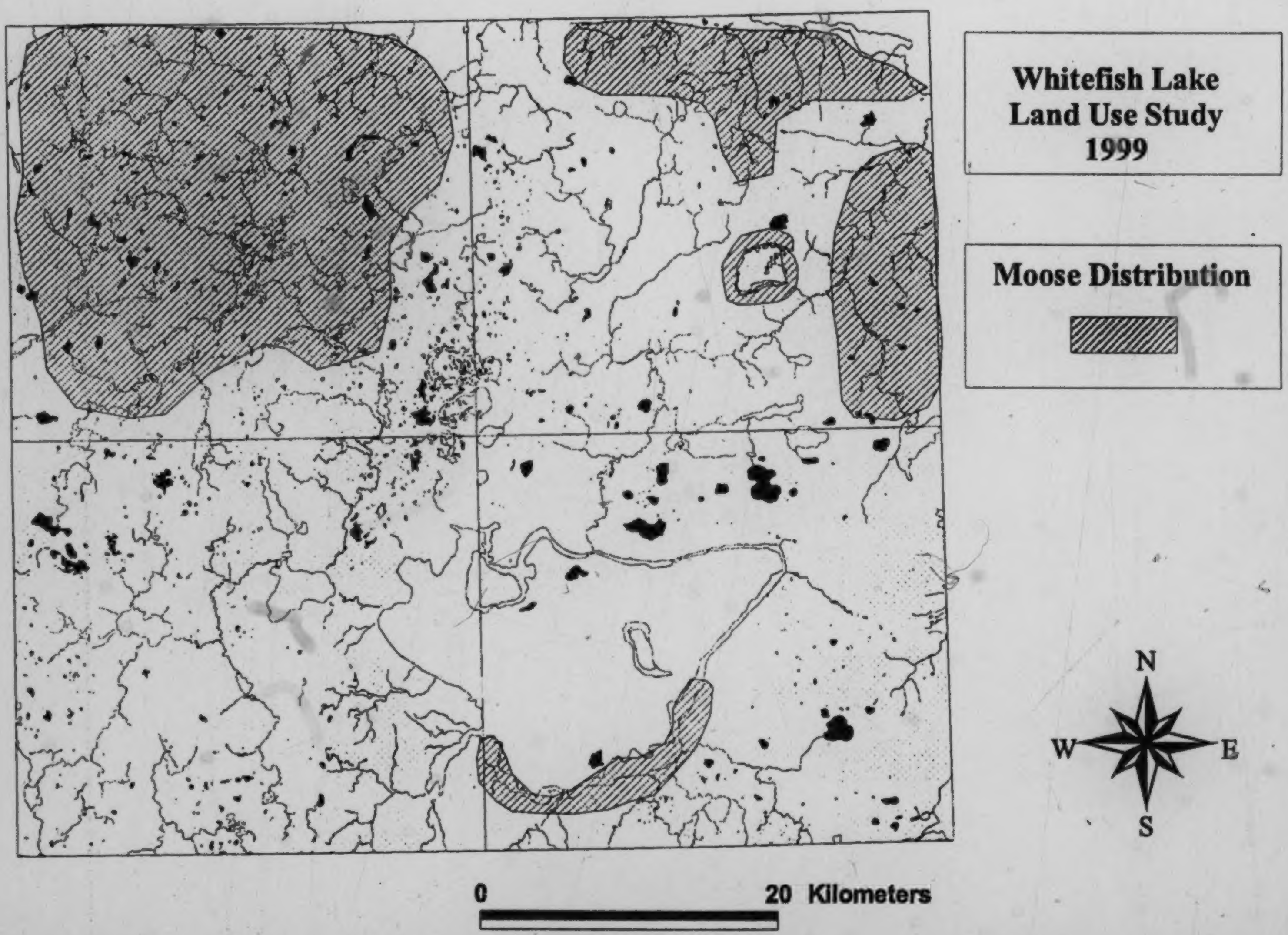
LARGE MAMMALS

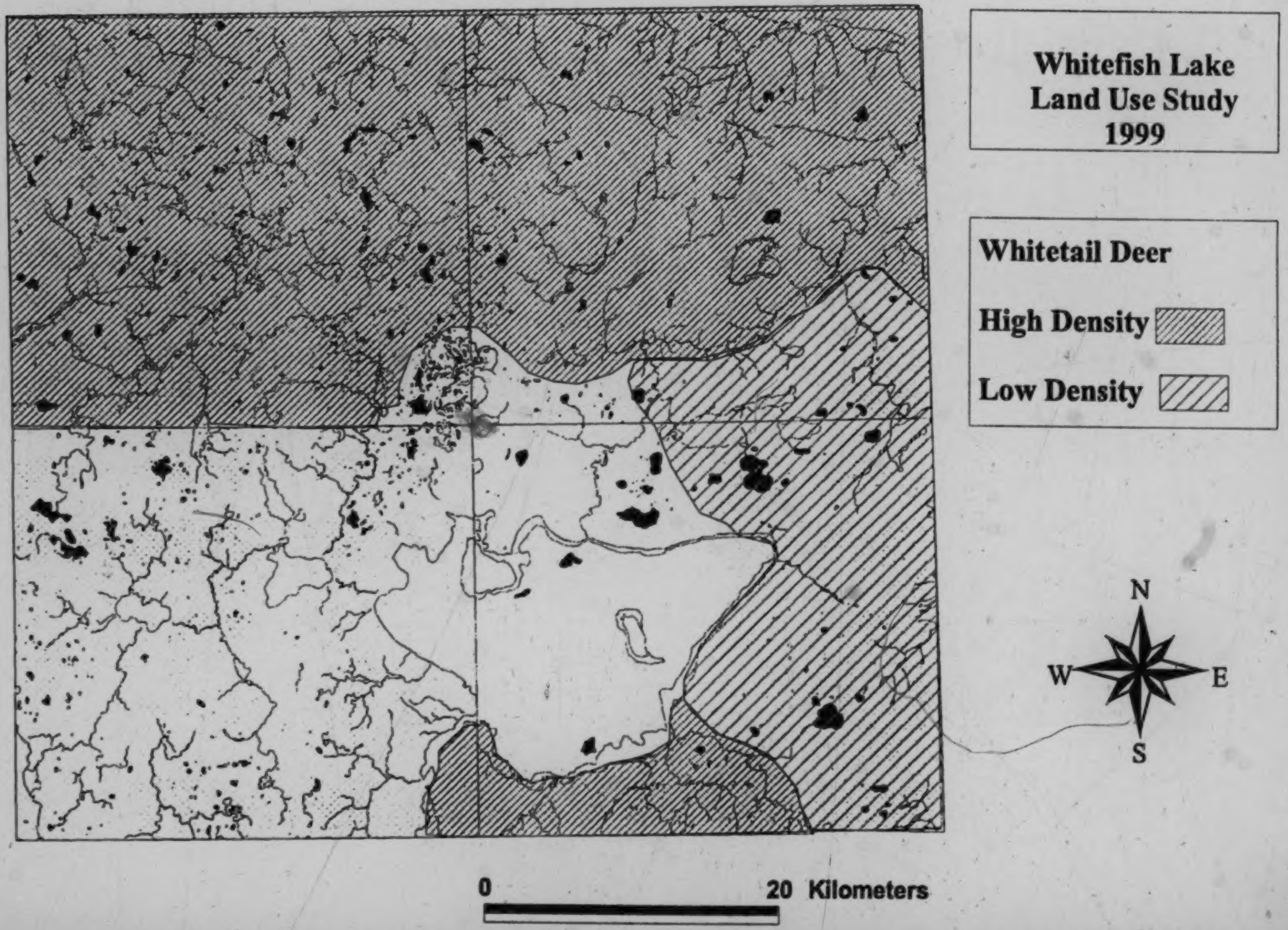
A total of six species were reported to occupy, or to have occupied, the management area within living memory. These include: moose, whitetail deer, woodland caribou, bison, black bear, and grizzly bear. Of these, moose represent the primary subsistence resource for community residents. Community residents reported a dramatic decline in the overall moose population in recent years. This decline is believed to be a result of several factors which include increased hunting pressure from recreational hunters, growing access to remote areas facilitated by road development, and an overall decline of productive moose habitat. These changes have forced many residents to expand their moose hunting territory to areas well outside the management area, such as the Smokey River and Little Smokey River corridors. However, Whitefish Lake hunters did report that areas that have yet to be opened up to development have maintained healthy moose populations, but acknowledge that these areas are likely to be lost if the current rate of resource development continues as it has in the recent past.

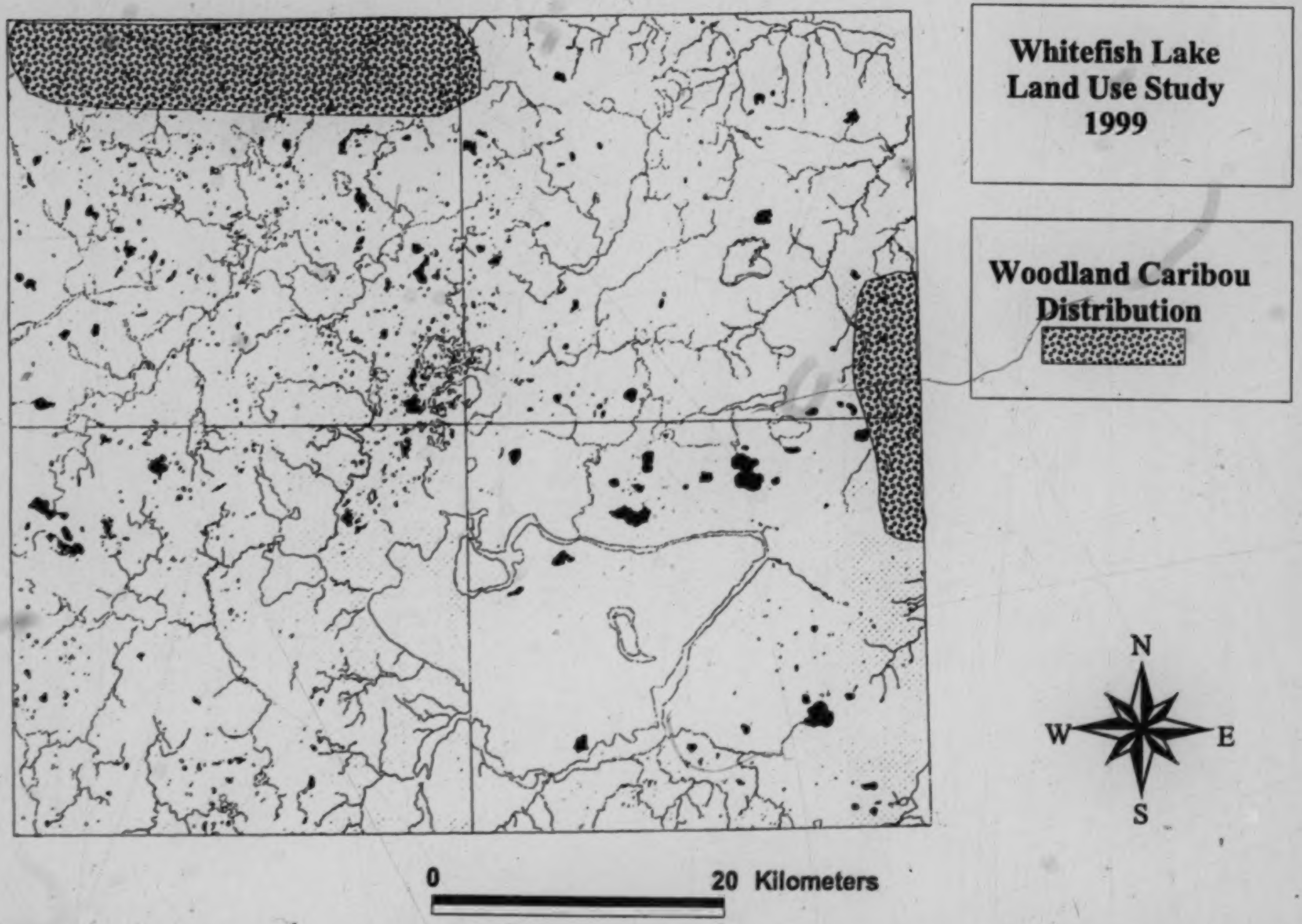
Whitetail deer have and continue to be well established within the management area. Their abundance is testimony to their adaptability as characterized by the Whitetail deer population across all of north central Alberta. Despite their availability, Whitetail deer represent a secondary subsistence resource, taken when the opportunity arises, but with little concerted effort. Reports of Woodland caribou were limited, but the occasional sighting was not considered out of the ordinary. Encounters were most often reported on the extreme eastern boundary near the Nipisi River area. Isolated herds of free roaming bison were reported in the northwest quarter of the management area; these herds were reported to roam to and from the Red Earth region. Wild horses are also said to range throughout this area. Frequent sightings were reported while traveling Route 880 to Red Earth and by trappers whose lines are located in the northwest section of the management area.

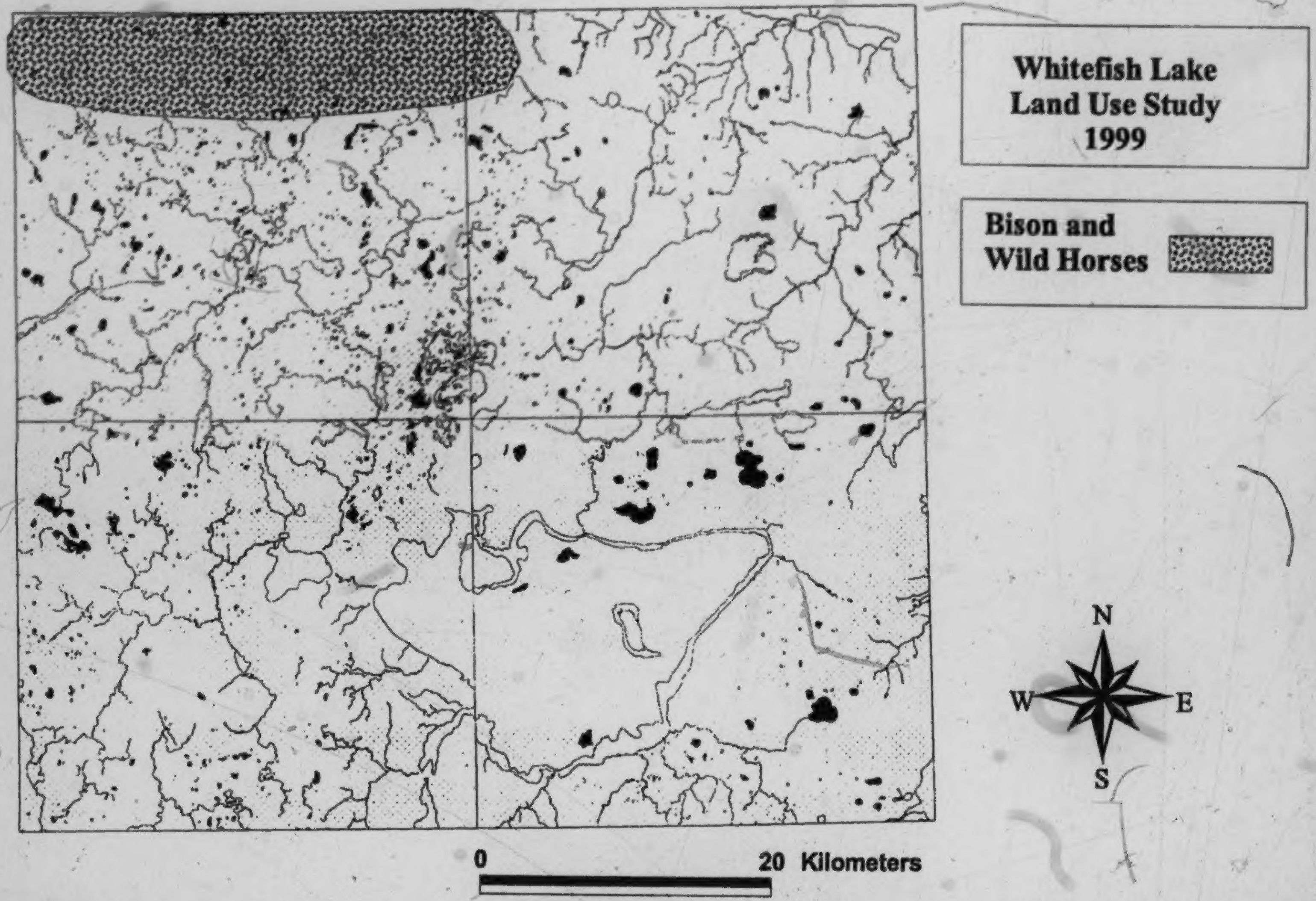
Black bear inhabit the entire management area. Their abundance contributes to frequent encounters throughout the summer and late summer months when berries are most abundant. Grizzly are far less prevalent throughout the management area with occasional sightings occurring in the far northwest quarter of the management area and throughout the eastern quarter, specifically near Sawle Lake and the Nipisi River area. Both of these areas are characterized by hilly terrain with steep ravines, a preferred habitat for the grizzly.


Whitefish Lake
Land Use Study
1999
Bear Distribution
Black Bear /
High Density ▨
Low Density ░
Grizzly ▥
N
W
E
S
0
20 Kilometers


Whitefish Lake
Land Use Study
1999
Moose Distribution
▨
N
W
E
S
0
20 Kilometers


Whitefish Lake
Land Use Study
1999
Whitetail Deer
High Density ▨
Low Density ▨
N
W
E
S
0
20 Kilometers


Whitefish Lake
Land Use Study
1999
Woodland Caribou
Distribution
N
W
E
S
0
20 Kilometers


Whitefish Lake
Land Use Study
1999
Bison and
Wild Horses
N
W
E
S
0
20 Kilometers

FURBEARERS

Fifteen fur-bearer species were noted during interviews with Whitefish Lake trappers. They include: beaver, muskrat, wolf, coyote, fox, martin, lynx, weasel, rabbit, fisher, mink, otter, skunk, squirrel, and wolverine. Of these, beaver and muskrat were reported to be the most widely distributed fur bearers in the management area. Fisher and mink populations were also reported to be high at the time of recording.

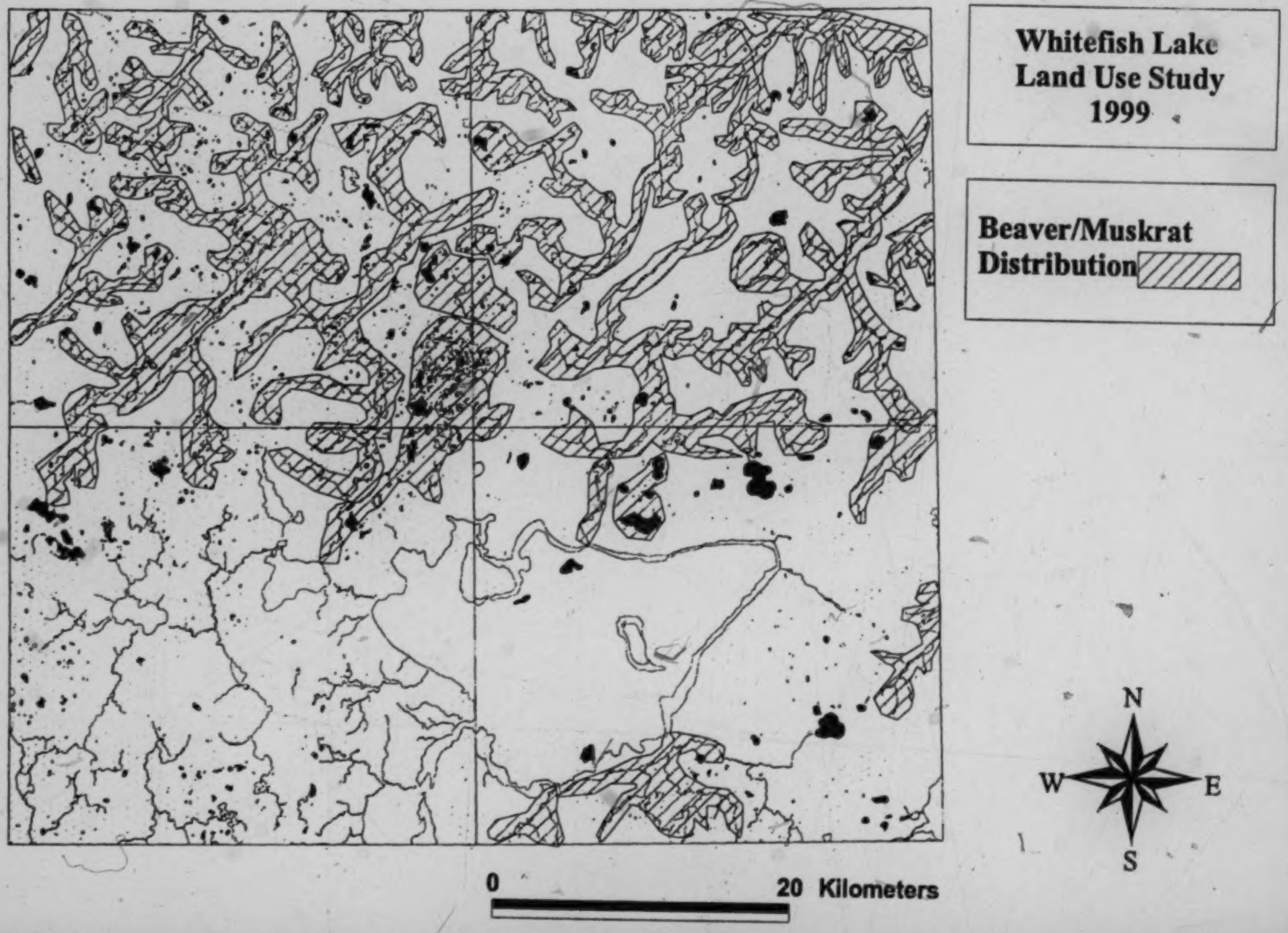
Wolves were reported to have long occupied the management area. A collective estimate by Whitefish Lake trappers suggest a pack ranging up thirty animals. This pack was said to roam as far south as High Prairie where they have reportedly become a growing threat to grazing herds of cattle.

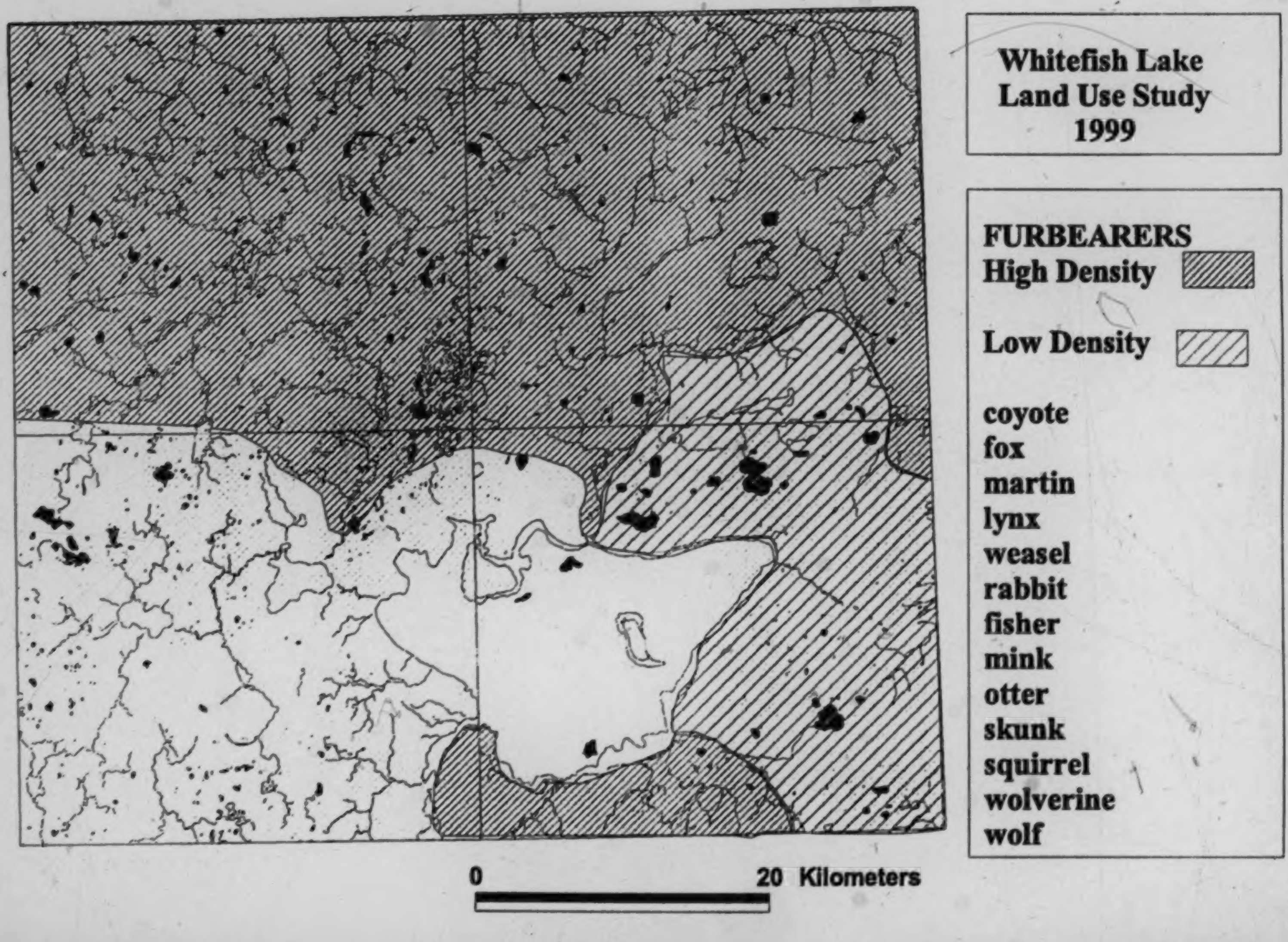
Of the fifteen fur-bearer species illustrated on the corresponding map, wolverines were reported to be the least abundant. Only a few elders recalled encountering wolverines in the Utikameg area. The location of these encounters generally occurred in the northern most section of the management area and no encounters were reported to have occurred in recent years.

The remaining fur bearers were reported to be evenly distributed throughout the management area. There were, however, acknowledged concerns over the future availability and sustainability of the local fur bearer population. These concerns included:

1) According to Whitefish Lake trappers, the permit system for property damage has illustrated a clear preference for the interests of industrial developers over the interests of local trappers. In the course of road and/or rail expansion entire colonies of beaver have been eliminated with little to no notification of the trapline owner. Trappers argue that they have successfully 'managed' these colonies for years only to have them destroyed for the interests of industrial developers.

2)Whitefish residents expressed concern over the amount of roadside and right-of-way spraying, pipeline spillage, and other industrial residues entering the local food chain. These residues are believed to affect the health and availability of the local wildlife population directly; thus adversely affecting the health of Whitefish Lake residents.


Whitefish Lake
Land Use Study
1999
Beaver/Muskrat
Distribution ▨
N
W
E
S
0
20 Kilometers


Whitefish Lake
Land Use Study
1999
FURBEARERS
High Density ▨
Low Density ▨
coyote
fox
martin
lynx
weasel
rabbit
fisher
mink
otter
skunk
squirrel
wolverine
wolf
0
20 Kilometers

MEDICINAL PLANTS AND HERBS

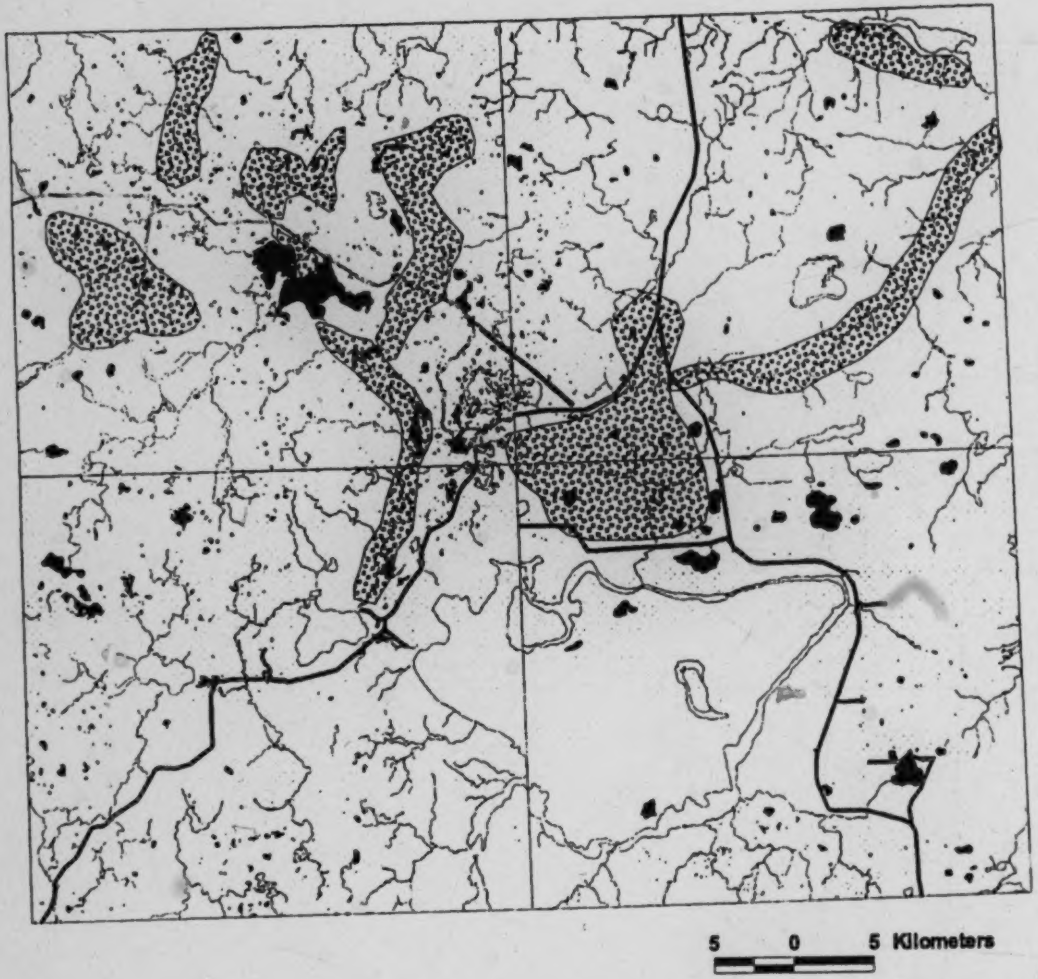
A variety of plants and herbs have been and continue to be used by community residents for medicinal purposes. Among the most commonly referred to were rat root, mint, wintergreen, muskeg moss, sweet grass, balsam root, aspen, alders, mountain ash and balsam fir. These and others were said to be applied to a number of ailment ranging from sore throats and headaches to heart disease.

In reviewing the medicinal uses of plants and trees distributed throughout the study area it became quite apparent that virtually all species of flora contain some measure of medicinal use. However, community elders expressed concern about the future availability of these plants as a result of increased resource development. The removal of ecological transition zones and micro-environments from the local landscape is creating a homogeneous environement that lacks the ecological diversity to support the growth of traditionally used plants and herbs. With a change in environmental variables (i.e., the amount of shade, soil acidity, and erosion) new plants that are better suited to that environment are being established, thus reducing the availability of traditionally used medicinal species. Further, the practice of roadside and corridor spraying of pesticides and herbicides also threatens to the continued use and availability of medicinal plants (specifically mint) and herbs.

BERRIES

Ten different types of berries were said to be distributed throughout the management area, these include: blueberry, strawberry, saskatoon, rosehip, raspberry, cranberry, bunchberry, chokeberry, pinchberry and kinnickinnick. For the purpose of this study it was decided to generalize berry type with a common mapping symbol rather than differentiate specific species.

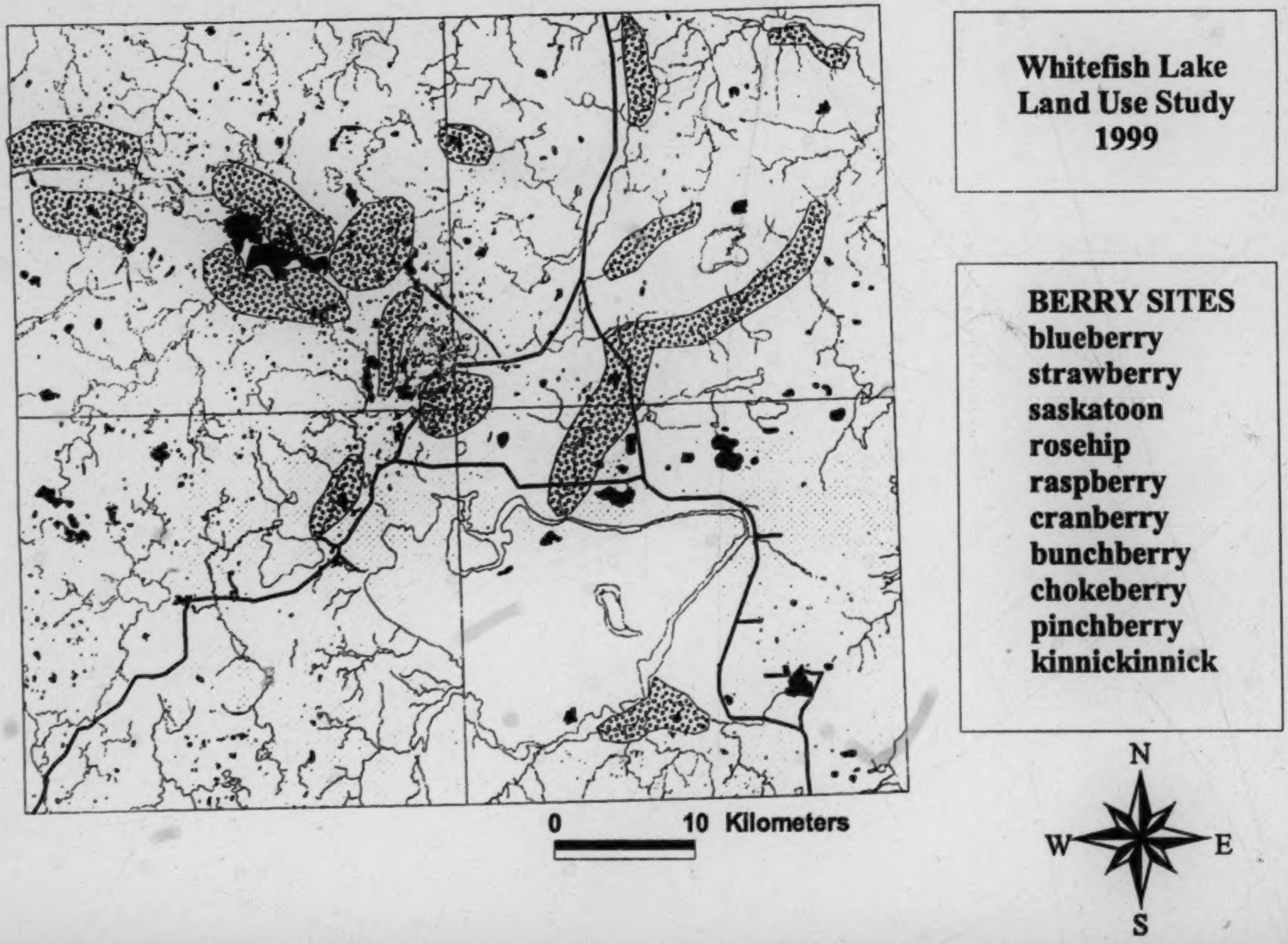
Each of the species listed above serves as an important dietary component for community residents. Depending on the characteristics of the berry (i.e., sweet or bitter) they can be cooked, eaten raw, dried, steeped for tea or frozen and stored for later use. By comparing the composite maps it is evident that the location of berry patches and the seasonal harvesting of berries generally coincide with other land use activities. For instance, September waterfowl hunting in the Acakasakahkan 'Mink Lakes' area also allows hunters and families to gather blueberries which are in abundance in the area at that time of the year. Further, berry patch locales represent important recreational sites for families.



Whitefish Lake
Land Use Study
1999

MEDICINAL
PLANTS/HERBS

rat root
mint
wintergreen
muskeg moss
sweetgrass
balsam root
aspen
alder
mountain ash
balsam fir

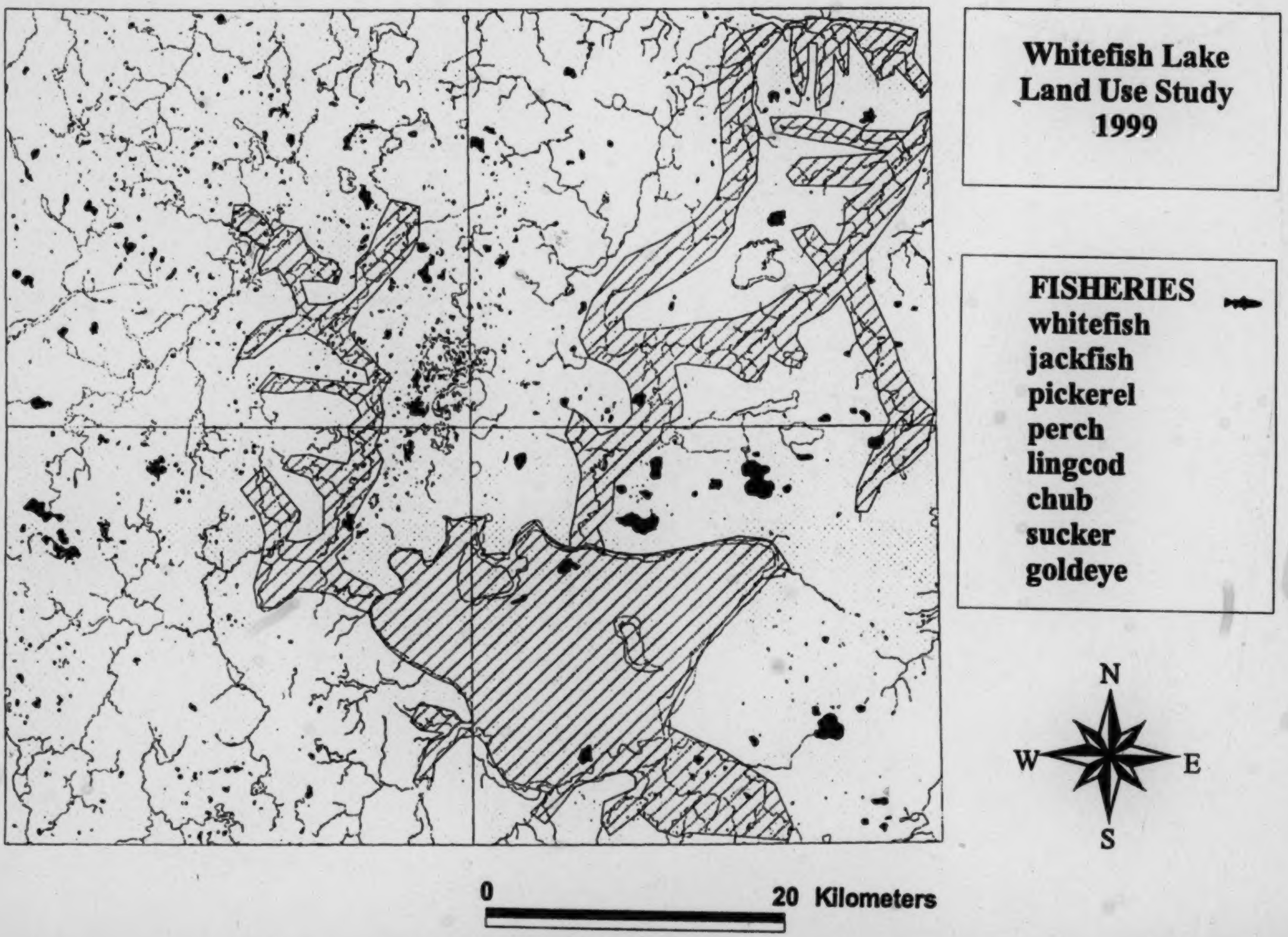

Whitefish Lake
Land Use Study
1999
BERRY SITES
blueberry
strawberry
saskatoon
rosehip
raspberry
cranberry
bunchberry
chokeberry
pinchberry
kinnickinnick
0
10 Kilometers
N
W
E
S

FISHERIES

Seven species of fish can be found within the management area, including: whitefish, jackfish, pickerel, perch, lingcod, chub, tullibee, grayling and goldeye. Of these, whitefish plays the most significant role in the diet and harvesting effort of community residents. Pickerel, jackfish and perch also serve as an important part of the local food supply.

A majority of the fish supply is harvested during the spring and fall migration. At these times whitefish can being harvested near the mouths of both the Sipihk 'The Big River' (Utikuma River) and Atcakasipik 'Mink Creek'. Additionally, whitefish, jackfish, pickerel, perch, goldeye and lingcod are caught throughout the open water months by hook and line and set nets, and during the winter months by net from below the ice.

Most of the fishing effort occurs on Atikameg 'Utikuma Lake' and Atikamegosak Ahihkani 'Little Whitefish Lake' along with Acakasakahkan 'Mink Lakes' to a limited extent. Commercial fisheries operate on both Atikameg 'Utikuma Lake' and Wisakimsakahikan 'Cranberry Lake'. The commercial harvest includes whitefish, pickerel and jackfish. Currently there is only one family from the Whitefish Lake First Nation participating in the commercial fishery. The limited involvement by community residents, however, does not reflect a lack of interest in the fishery, but rather, reflects the Provincial allocation of fifty percent of the commercial quote to non-Native commercial fisherman and the remaining fifty percent to Gift Lake Metis Settlement commercial fisherman. (Note: This issue is currently under review by the Co-operative Management Implementation Committee).


Whitefish Lake
Land Use Study
1999
FISHERIES
whitefish
jackfish
pickerel
perch
lingcod
chub
sucker
goldeye
N
W
E
S
0
20 Kilometers

COMPETING LAND USE PATTERNS

Within this delineated environment exist a number of competing interests that have influenced the land and resource use of the WFLFN. As a result, each of these interests have individually and collectively influenced the land use patterns of the WFLFN. These interests include:

Habitat Protection and Reclamation Areas

Within the co-operative management area exists a number of land use reservations which limit and/or influence community land use activities. Classification of these areas include:

1) Surface Material Exploration
2) Sand and Gravel Removal
3) Surface Material Stockpile Site
4) Surface Material Potential
5) Reclamation Project
6) Ungulate Habitat Protection Area
7) Research or Sample Plots
8) Silvaculture Plot
9) Habitat Management Area
10) Seed Production Area
11) Waterfowl Production Areas
12) Lakeshore Recreational Site Potential

Forestry Activity

Timber extraction in the Whitefish Lake area first began in 1970 with the first Timber License being awarded to a local contractor. However, it was not until 1988 that serious interest was given to the area as a primary source of both deciduous and conifer timber. With the encouragement of the Alberta provincial government Yuen Fung Yoo (YFY) Paper Company from Taiwan proposed the first pulp/paper complex to be located in the community of High Prairie (approximately 76 kilometers southwest of Whitefish Lake). YFY's proposal was well received by provincial land managers enabling YFY to issue debentures in American markets to finance the facility. However, owing to a number of internal reasons, YFY's proposal failed to materialize forcing the province to "advertise" in an attempt to attract another forest products industry.

Tolko Industries Ltd. based in Vernon, British Columbia was the successful bidder for the High Prairie Timber Development Area (TDA) and was subsequently awarded the deciduous rights to the area in 1994. Construction for the Tolko pulp/paper mill began in 1994 and was completed in 1995. Following the mill's completion and successful negotiations with the province, Tolko, in 1997 was awarded a Forest Management Agreement (FMA) covering most of the TDA lands, including lands that represent the traditional territory of the Whitefish Lake First Nation. The annual allowable cut for this area is 160,000 m^3 per year.

Oil/Gas Development

The rise of the oil and gas industry in Alberta was initiated through the discovery of oil in the County of Leduc, just south of Edmonton, in 1947. With this discovery the oil and gas industry in Alberta (and to a large extent western Canada) sprang to life. Soon after the Leduc discovery, many of the world's largest petroleum companies began investing in the exploration and development of Alberta's crown lands.

Whitefish Lake residents recalled their first encounters with oil workers in the mid-1950s. Arriving in "large trucks", workers began clearing exploratory seismic lines on the north shore of Utikuma Lake (lines that would soon zigzag the entire Whitefish Lake territory). Because road access to the Whitefish Lake territory was seasonal, and to a large extent quite variable, barges were used to transport both men and machinery across Utikuma Lake to reach its' north shore. Because of the difficulty in travel, as well as the expense associated with the development of this still remote area, only a few wells had been established north of Utikuma Lake. However, by the 1960s, seismic activity and road access had begun to reach some of the most remote areas of the Whitefish Lake territory.

By the mid-1960s, exploration in the Whitefish Lake territory took a giant leap forward. With the completion of an all-weather road that extended north from the community of Slave Lake (now Rt. 88), a network of industrial access roads soon spread throughout the north and north-east portions of the Whitefish Lake territory. Resulting from the heightened exploration, the Nipisi Oil Field was discovered and went into operation in the winter of 1966-67. Located just east of Utikuma Lake, the Nipisi Field represents one of the most productive fields in north-central Alberta. Housed on the Nipisi Field are several hundred wells supported by approximately 600 miles of industrial access roads and an equivalent amount of seismic and pipelines.

Since their first encounters with oil workers in the 1950s, Whitefish Lake residents have witnessed their landscape transformed to meet the needs of external interests. Within the traditional territory of the WFLFN now exist approximately 875 petroleum wells, 127 petroleum depots and a supporting infrastructure of primary and secondary access roads, pipelines, electrical powerlines and seismic lines. To compound the effects of this developing infrastructure, "No Trespassing" signs have been posted, warning local residents of these private industrial areas. Seeing their lands divided into leases, and allocated to resource developers, it has become increasingly apparent to the residents of Whitefish Lake that their cultural landscape has gone unrecognized by the industrial developers operating within the homeland of the WFLFN. More importantly, it is clear that this is unrecognized by 'their' provincial government.

Resource Competition

A residual effect of the industrialization of the Whitefish Lake territory has been the development of an extensive infrastructure of primary and secondary access roads, right-of-way corridors, and seismic lines that have effectively opened up and made accessible even the most remote areas of the Whitefish Lake territory. As a result of the increased accessibility Whitefish Lake residents have experienced increased competition from non-aboriginal hunters over declining populations of 'game' species (i.e., moose, mule and whitetail deer, and black bear).

While many of the non-aboriginal sportsmen travel from the nearby communities of Slave Lake and High Prairie, a growing number are being attracted from Edmonton, Red Deer and Calgary. Further, non-aboriginal outfitters are attracting a growing number of U.S., European and Asian sportsman who have further "saturated the backyard" of the WFLFN with additional hunting pressure (NMMPPR 1998). Within the Whitefish Lake territory there are approximately 15 moose outfitters and 21 black bear outfitters currently in operation (Heckbert, pers. com. 1999a).

WMU[99]	544	542	520	Total
Black Bear	60	129	90	279
Moose	22	58	60	140
Mule Deer	3	0	10	13
White-tailed Deer	10	4	7	21

Outfitter-Guide Allocations (1998-2003)
(Heckbert 1999b)

While harvest figures for guides and outfitters can be tabulated it has proven difficult to ascertain accurate figures for a total harvest of game species owing to the limitations common to survey methodologies. Because of this, total harvest figures can only be estimated. However, since 1993 the Natural Resource Division of Alberta Environmental Protection has initiated the Northern Moose Management Program (NMMP) in response to concerns expressed by aboriginal and sport hunters regarding the declining moose population in northern Alberta. Funded through the Fish and Wildlife Trust Fund, the NMMP is developing and enacting measures in an effort to reverse the declining moose population that ranges throughout the Whitefish Lake territory.

WMU 544, 542, 520	1997	1996	1995	1994	Total
Moose	322	209	306	280	1117
Black Bear	X	16	51	35	102
Mule Deer	17	0	28	15	60
White-tailed Deer	85	48	123	141	397

Sport Harvest Data
(Heckbert 1999b)

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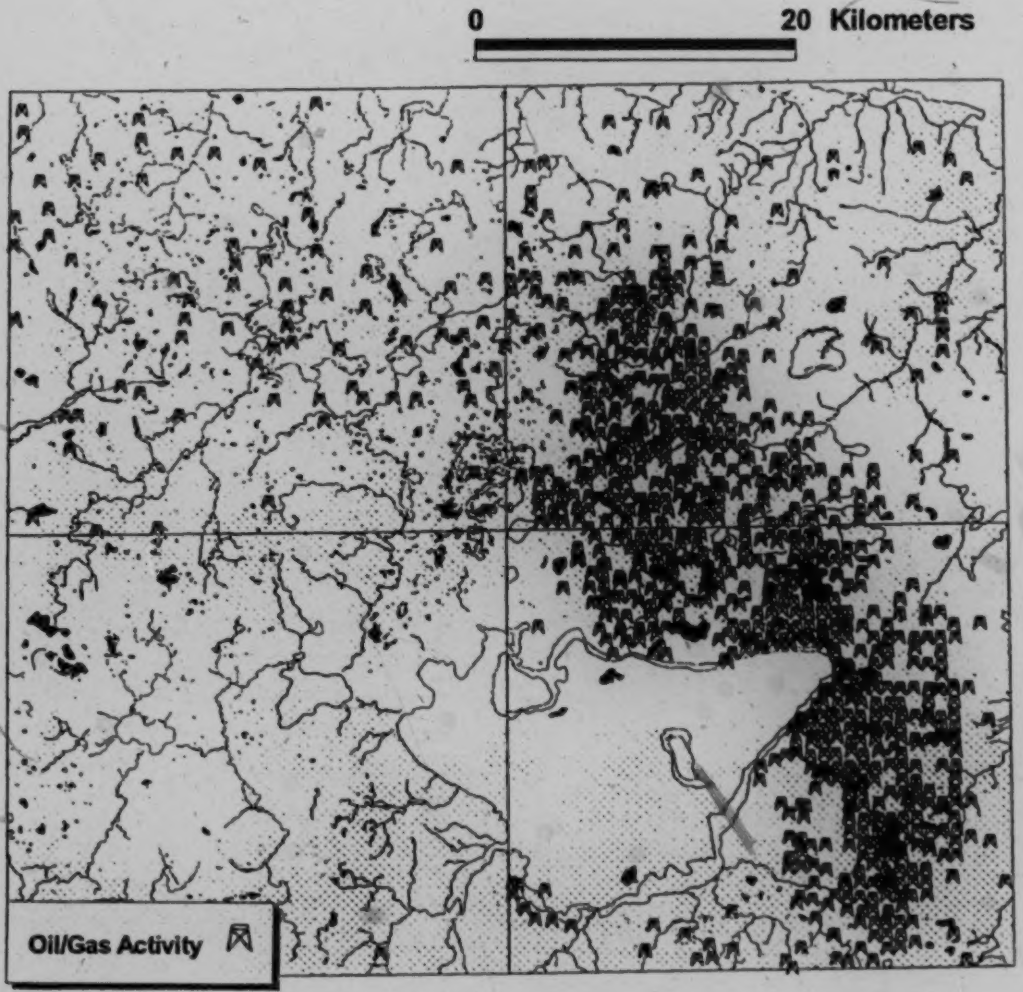
[99] The traditional territory of the WFLFN is provincially managed as three distinct Wildlife Management Units (WMU 544, 542, 520).

Gift Lake Metis Settlement

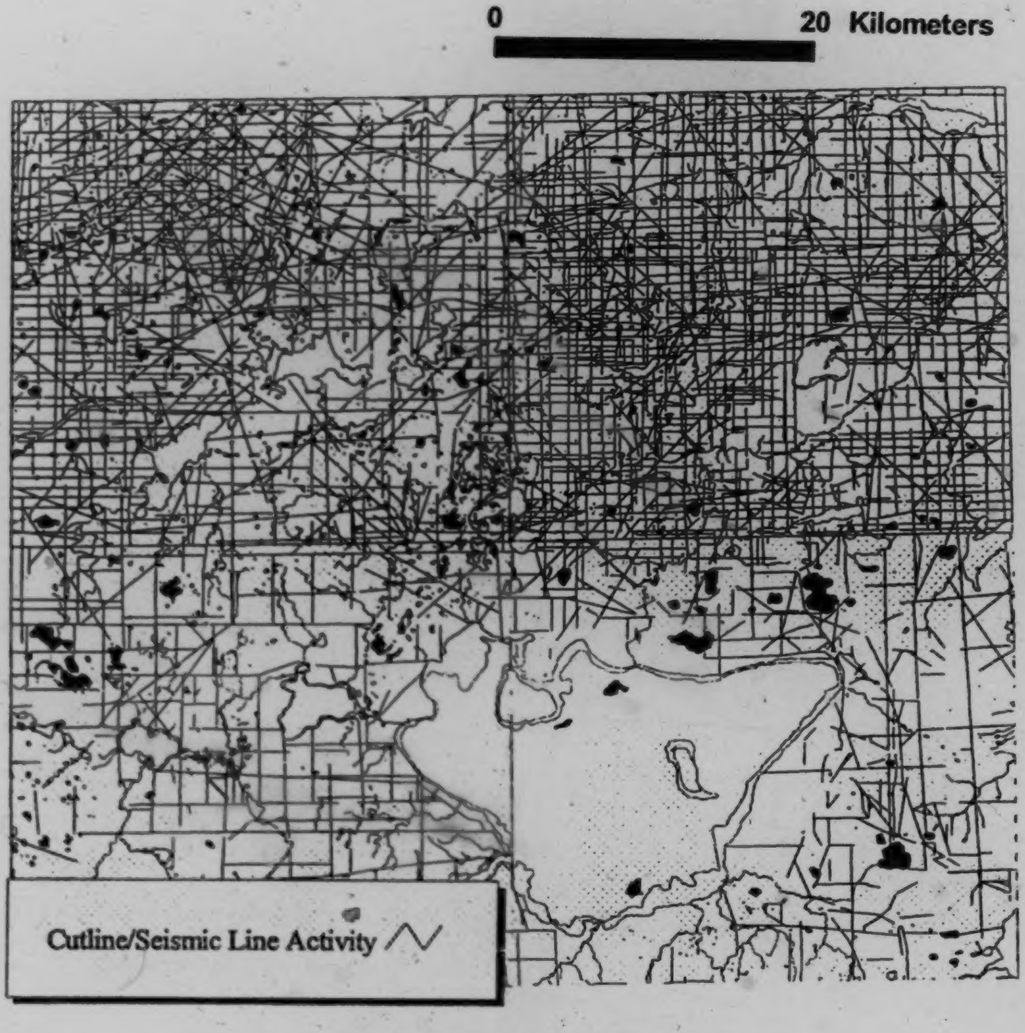
In the context of aboriginal land conflicts, the Alberta Metis Settlements represent an anomaly in Alberta. Only in Alberta have the Metis succeeded in establishing their own communal land base. Through the Metis Betterment Act of 1938/40 more than 500,000 hectares of communal land have been provided along with hunting and fishing rights, socio-economic benefits, and health programs for Metis residents (Notzke 1994:186). Under this Act, twelve settlement were established (of which eight remain) throughout Alberta. The Gift Lake Metis Settlement represents one of the those land bases.

The Gift Lake Metis Settlement is located directly west of Utikuma Lake, bounded by Peavine Metis Settlement to the west and the Whitefish Lake Reserve (R. 155) to the east. The land base that was established for Gift Lake residents comprises a 83,916 hectare (207,273 acres) area. This land base is approximately 839 km^2 (324 mi^2) and represents the second largest Metis Settlement in Alberta (McCully and Seaton 1982: 16).

Despite First Nation treaty rights of "hunting, trapping, and fishing for game and fish for food at all seasons of the year on all unoccupied crown lands and any other lands to which the said Indians may have a right of access", Metis settlement lands have been classified as private lands administered by the province, thereby removing them from First Nation access. The establishment of the Gift Lake Settlement subsequently removed 839 km^2 of land and resources from the use of Whitefish Lake residents despite its representing a significant portion of their traditionally used and occupied territory.


0
20 Kilometers
Oil/Gas Activity

Oil and Gas Development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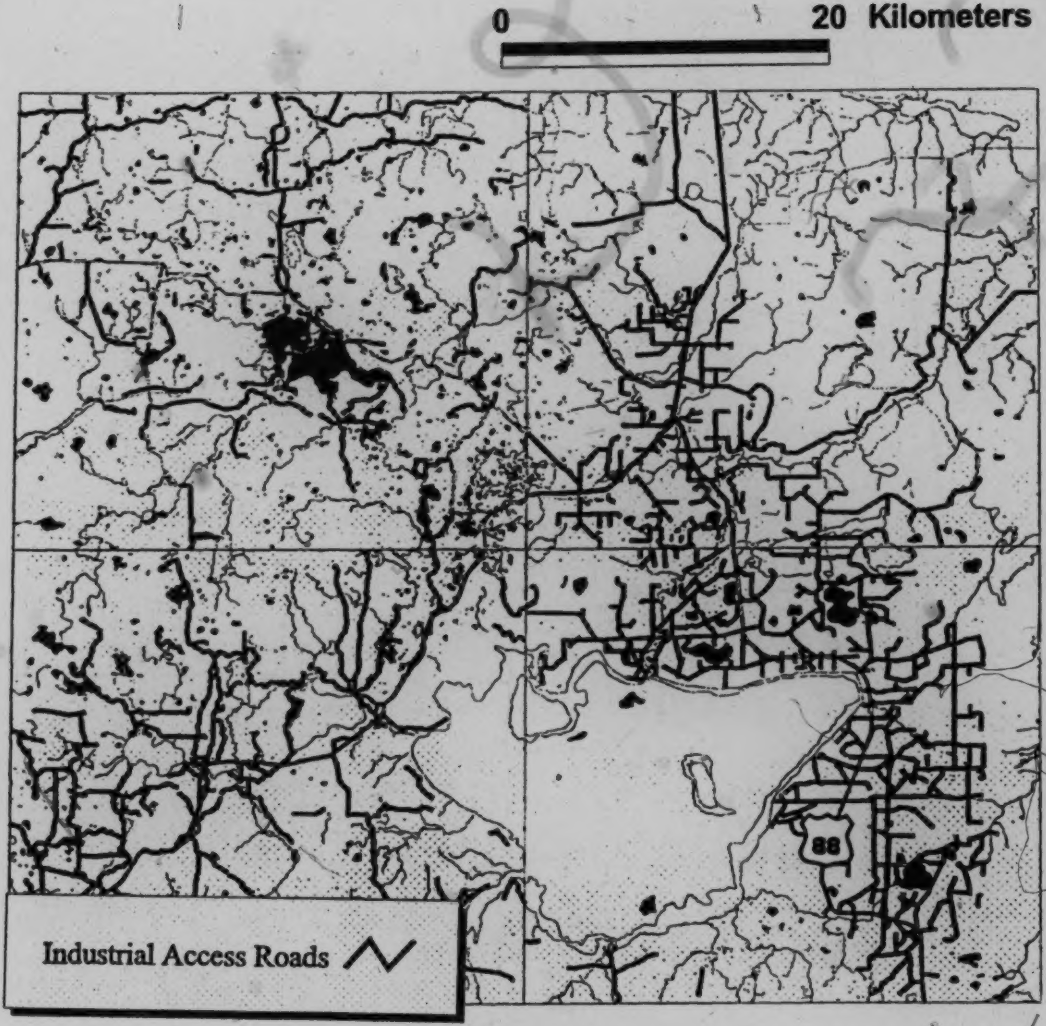
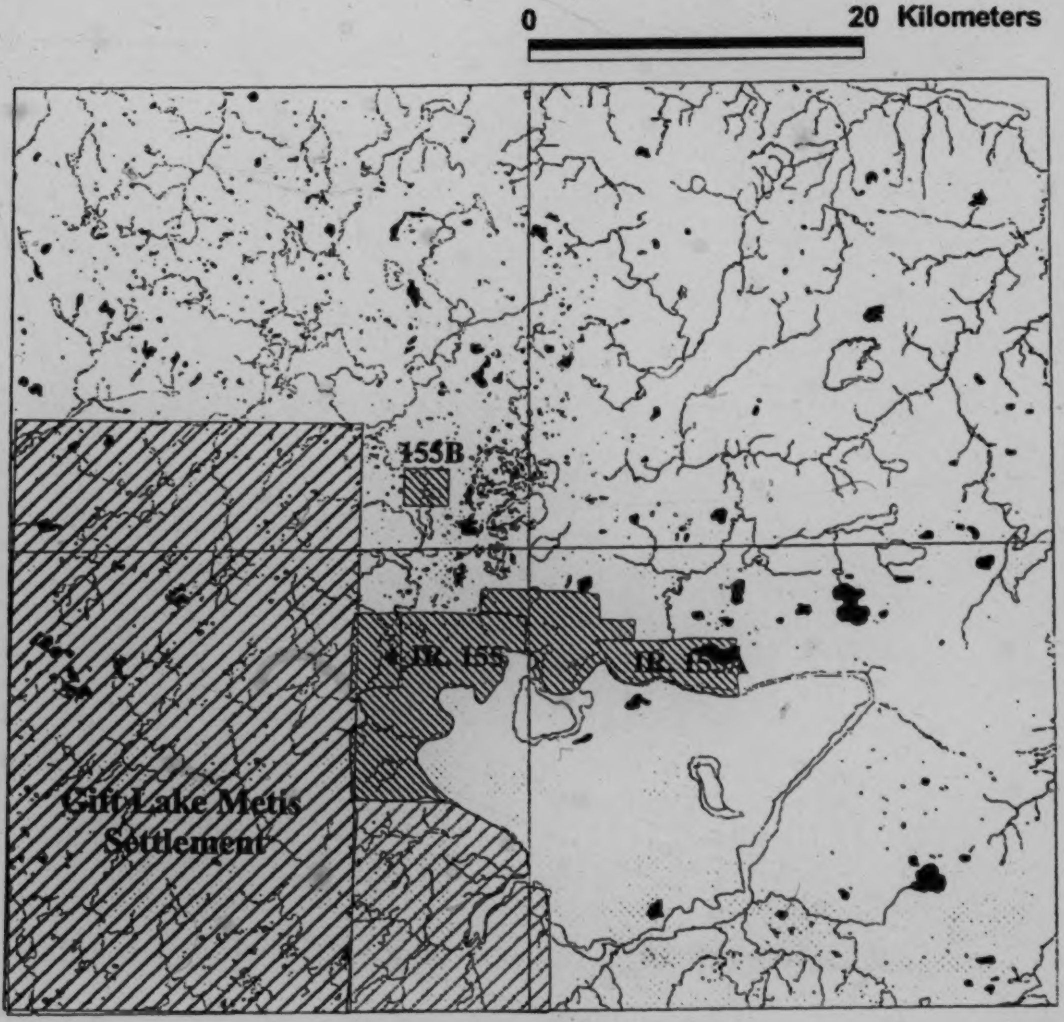
Cutline/Seismic Line Activity ╱╲╱

Cutline and Seismic Line Activity


0
20 Kilometers
88
Industrial Access Roads

Industrial Access Roads


0
20 Kilometers
155B
IR. 155
IR. 155A
Gift Lake Metis Settlement

Gift Lake Metis Settlement

References Cited

Apland, Brian and Ray Kenny (eds.)

1989 British Columbia Archaeological Impact Assessment Guidelines. Province of British Columbia, Ministry of Municipal Affairs, Recreation, and Culture, Archaeology and Outdoor Recreation Branch, Victoria.

Brody, Hugh

1981 Maps and Dreams. Vancouver: Douglas and McIntyre.

Dene Cultural Institute

1997 Report on Aboriginal Participation in Mining: Increasing Knowledge. Eighth Annual Report, July.

Fort McKay First Nation

1994 There Is Still Survival Out There: A Traditional Land Use and Occupancy Study of the Fort McKay First Nation. Alberta, Canada.

Freeman, Milton M.R.

1976 Report, Inuit Land Use and Occupancy Project (3 vols.). Ottawa: Department of Indian Affairs and Northern Development.

Heckbert, Mark

1999a Wildlife Biologist, Alberta Environmental Protection, personal communication, March 22.

1999b Outfitter-Guide Allocation and Harvest Data: Wildlife Management Units 544, 542, 520. Alberta Environmental Protection, Natural Resource Division, High Prairie, Alberta.

McCully, Al and Hugh Seaton

1982 Gift Lake Metis Settlement Land Use Planning Inventory. Municipal Planning Section, Planning Branch Alberta Municipal Affairs.

Northern Moose Management Program Progress Report (NMMPPR)

1998 Northern Moose Management Program Progress Report (NMMPPR). Alberta Environmental Protection, Natural Resource Service. Edmonton, Alberta.

Usher, Peter

1990 Recent and Current Land Use and Occupancy in the Northwest Territories by Chipewyan and Dene' Bands. Office of the Prince Albert Tribal Council. Saskatchewan, Canada.

Westworth, D.A. and Associates Ltd.
1990 Significant Natural Features of the Eastern Boreal Forest Region of Alberta. Technical Report, Alberta Forestry, Lands and Wildlife. Edmonton, Alberta.